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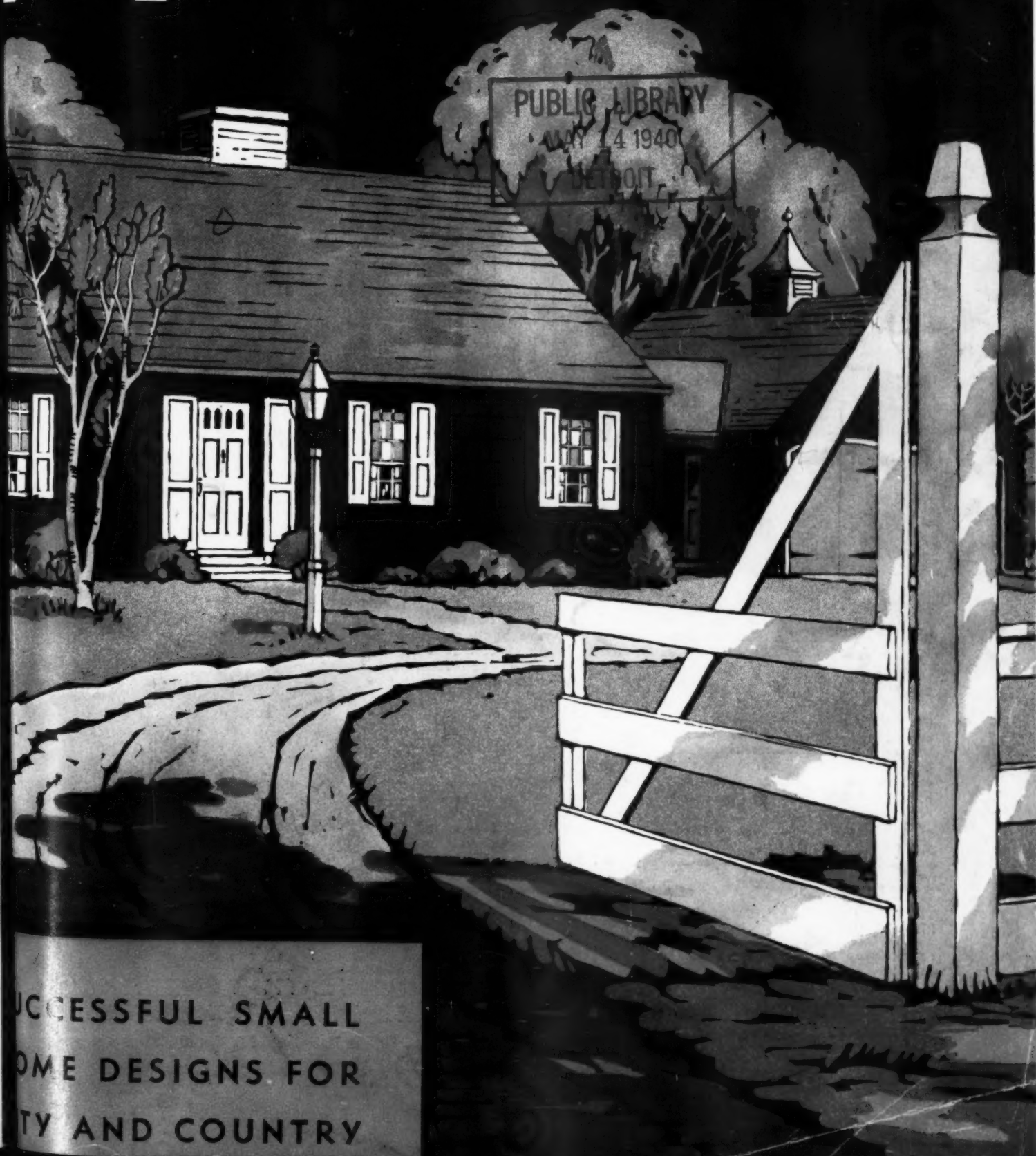
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AMERICAN BUILDER

and Building Age

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Gentlemen: Please send me the new illustrated literature on Bruce STREAMLINE Flooring, and a "Scratch Test" Panel!

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PUBLISHER'S PAGE

Who Shall Pay Highway Costs?

UNDER the sponsorship of five national business and agricultural organizations, a two-day conference on the serious problem of real estate taxation was held in Washington, D. C., in the latter part of April. The need for grappling with this problem was emphasized a week previously by the issuance of a federal government report tending to promote loading of more taxes on real estate.

This was a report by Joseph B. Eastman in his former capacity of federal co-ordinator which estimated total costs of the country's highways in the years 1921-1937 at more than 25 billion dollars, and that taxpayers in general paid over 15 billion of this, or 60 per cent, and users of the highways (in motor vehicle, gasoline and other taxes) about 10 billion, or only 40 per cent. As if this was not bad enough, he recommended that taxpayers in general should continue to be required to pay 60 per cent and users of the highways only 40 per cent.

Nothing can be done about the past; but certainly all real estate owners and the building industry should rebel against this conclusion as to what the policy in future should be; *for the great bulk of all highway taxes not levied on highway users has been, and will be in future, levied on real estate.*

TOTAL highway costs are now about 2 billion dollars annually, and still increasing. Why these vast expenditures? Formerly improved roads and streets were built largely to benefit real estate by connecting the farms with nearby towns, and connecting the residential districts of towns and cities with each other and with the business districts. But since the passing of the "horse and buggy" era most roads and streets have been built *largely regardless of the effect on real estate and for the sole purpose of facilitating the use of motor vehicles.*

In many instances expenditures on

roads and streets still increase the value of real estate. But within recent years in more and more instances they have *reduced* it; and as time passes their benefit to real estate owners becomes more questionable. If a farmer or home owner already has access to good roads or streets leading wherever he ordinarily wants to go, of what benefit is it to him, as a *farm-owner or home-owner*, to have these roads and streets widened to two, four or eight lanes and greatly strengthened? The use of roads and streets by constant streams of automobiles, buses and trucks almost invariably reduces, rather than increases, the pleasure of living on adjacent real estate, and therefore reduces its value.

THE determination of who shall be required to pay taxes should not ignore the purpose for which they are to be spent and who will benefit by it. And everybody knows it would be silly to deny that the great majority of highway costs are now incurred to facilitate the use of motor vehicles. Why, then, not make those who use the highways pay the great bulk of these taxes, and pay in proportion to the costs caused by their use of them?

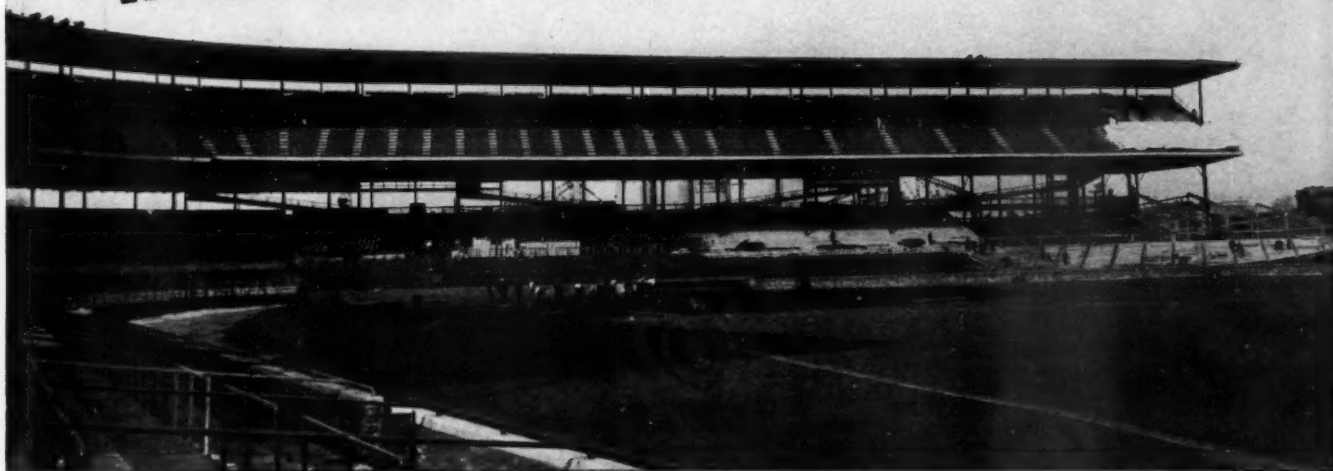
The opposite policy favored in the Eastman report is a policy of *excessively taxing real estate to subsidize use of the highways.* It tends to hinder home building and home owning by increasing their cost, and to stimulate motoring by making it seem cheaper than it is.

When all intelligent persons agree there is nothing the country's welfare so imperatively demands as a large increase of home building and home owning, and some government departments are actively promoting it, the advocacy by some government officials of policies inimical to it seems highly incongruous.

Samuel O. Dunn,

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WHEN the umpire called "Play Ball," the new left-field grandstand at the Chicago National League Baseball Park was ready—thanks to good job planning and the use of 'Incor' 24-Hour Cement by H. F. Friestedt Co., general contractors, who state:

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"We stripped our forms in 3 to 4 days, saving through earlier re-use. Specifications called for 3000 lbs. in 28 days. Cylinders tested by Robert W. Hunt Company showed strengths of 4086 to 4421 lbs. per sq. in.—averaging 41% higher than specifications. *Results were more than gratifying.*"

It pays to estimate every job with both 'Incor' 24-Hour Cement and Lone Star Cement. Use 'Incor'* where it shows you a net profit—elsewhere, use Lone

Star, quality standard ever since 1900. Written quality guarantee with every shipment. Write for copy of "Cutting Concrete Costs." Lone Star Cement Corporation, Room 2233, 342 Madison Avenue, New York.

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AMERICAN BUILDER

AND BUILDING AGE

Home Builders Should Organize

WHILE some organized groups in the building industry are under criticism, let us not lose sight of the fact that many outstanding achievements and worth-while beneficial improvements have been brought about by *constructive* organized effort.

Today, as never before, such constructive organized effort is called for from residential contractors and operative builders. Of all the men in the industry, home builders are most in need of a vigorous national association, supported by strong local groups who truly represent the residential contractors and operative builders. Such local builder groups, united in an independent national association with elected officers, could do much to correct abuses and encourage more and better home building.

Objective: Lower Costs, More Homes

Every other group of any importance has a powerful national association with effective local groups supporting it. Architects, realtors, lumber dealers, and building and loan associations, to mention only a few, have well known and constructively managed associations. Yet there is no truly representative national body to speak for the many thousands of residential builders upon whom the work of all the others depends.

The objective of such a national association of residential builders should be to *reduce* construction costs and *expand* the market—the direct opposite of some of the big city pressure groups and unions—such as Electrical Local 3 of New York City—that have been under fire.

For it is obvious that when any small group of men in this industry manages to put into effect policies or restrictions that increase home building costs, it is the residential builder who is injured most. When a labor union, for example, demands excessively high wages, short hours or limitation of output, the increased costs must either be borne by the residential builder or passed on to the public, and it has become quite obvious in recent years that the public will refuse to buy under such conditions.

Philadelphia Shows Way

A good illustration of the type of organization that can do much to serve its industry is the Home Builders' Association of Philadelphia and Suburbs. Here is a group of some 70 prominent residential builders, organized in an association which is a vigorous and effective exponent of their collective opinions. The members of this Association built some 7,000 homes in 1939 and now have as their objective 10,000 in 1940. The secretary is Mr. Carroll Shelton, who has done much to unite the active builder members in a vigorous and worth-while program for the benefit of their industry. Officers are Carl Metz,

president; Edward A. Kerr, vice president; N. L. Traub, treasurer—all active and successful residential builders. Offices are maintained in the Market Street Nat'l Bank Building.

This Association is the collective bargaining agency for all its members in Philadelphia and suburbs and represents the builders in their negotiations with the unions. More than that, it is an effective power in presenting grievances or suggested changes to FHA officials, building code administrators and other public or semipublic bodies with which residential contractors and operative builders come in contact.

The Philadelphia builders have recently sponsored a new agreement of sale which is a guard against disagreements or disputes. Under the energetic direction of Secretary Shelton, they have also sponsored a remarkably large and successful home show, held in the Philadelphia Armory, which brought out thousands of prospective home buyers. This show clearly proved the power of organized builders to create public sentiment for home ownership and, through extensive newspaper publicity and advertising, to direct that sentiment towards the actual purchase of homes.

A.F.L. or C.I.O.?

The constitution, by-laws and constructive program of this Philadelphia Association are models which might well be emulated by residential builders in other cities. Secretary Shelton as well as the officers have expressed their willingness to affiliate with other bona fide organizations of residential builders in the formation of a National Association. Their closeness to Washington should make it easy to set up headquarters in touch with legislation affecting home building—particularly legislation affecting FHA.

Among the pressing problems that need to be faced are labor relations. The C.I.O. has expressed its ambition to organize the residential building field. Simultaneously, or possibly as a result of this "threat," A. F. of L. representatives in some sections have agreed to permit the organization of the small home field on the basis of a simplified craft structure with one wage applied to the majority of skilled mechanics. Both of these are represented as forward-looking moves which will reduce building costs.

The question may well be asked whether such unionization would not be more likely to *increase* building costs, since the bulk of residential building is at present either nonunion or performed by workers not operating under the official scale. This is a subject which well organized local groups of residential building employers are best able to determine.

18 Sold in Two Days

\$2625 Houses Sell Faster in Chester, Pa., than They Can Be Built. Down Payment \$125. Builder and Dealer Co-operate in Project. All Cutting Done in Dealer Shop

By Joseph B. Mason



W. J. McDOWELL, dealer, and P. E. HELMS, builder.

IN Chester, Pa., a builder and a lumber dealer, with the help and support of FHA, have clearly shown the great possibilities in low cost home building.

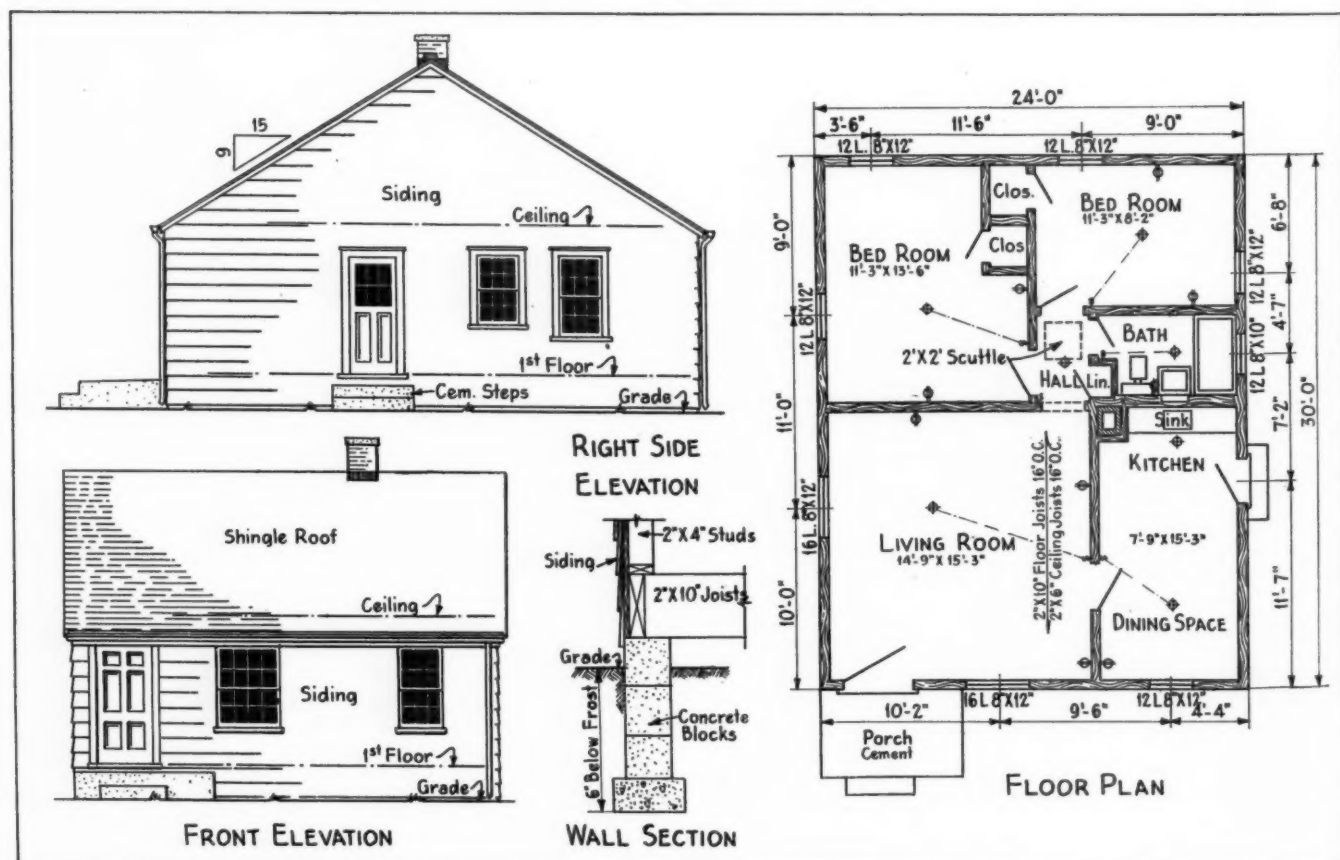
P. E. Helms, the builder, and Wesley J. McDowell, lumber dealer, have been studying low-cost homes for several years. In this project all the lumber is precut to exact size in the McDowell Lumber Company's shop, and the entire job is thoroughly worked out in every detail to eliminate waste motion.

The first model home, as detailed below, was completed in December. A modest newspaper advertisement was placed in the local paper, announcing the price,

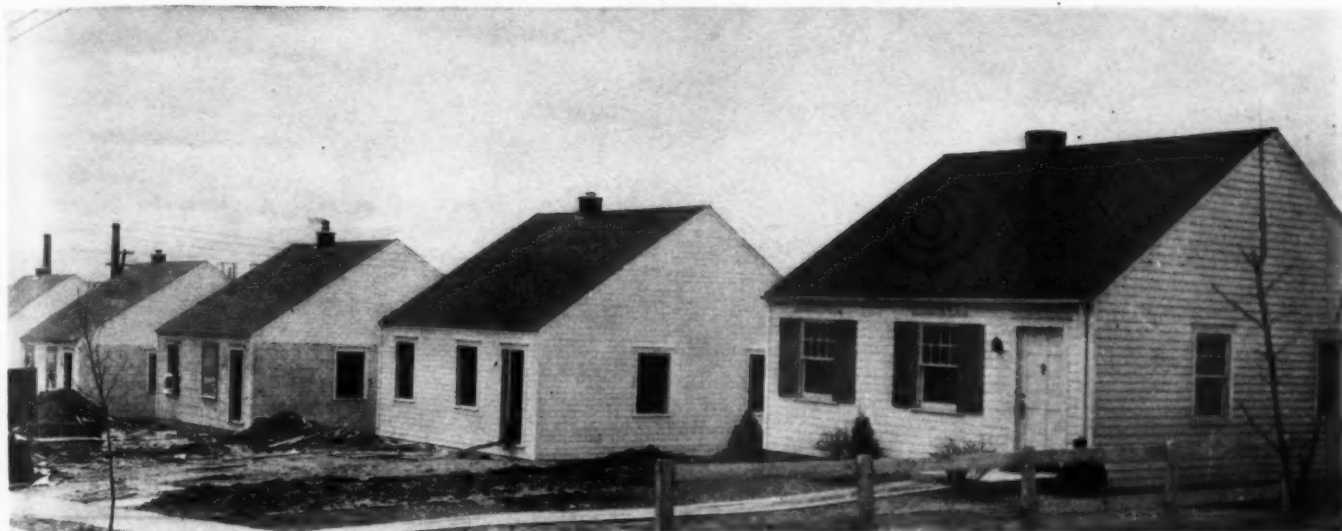
\$2625, and the down payment, \$125. That week-end 3,500 people came out and the model house and 17 others sold. Hundreds of disappointed people were turned away.

Total carrying charges of these little houses, including interest, amortization, taxes and insurance, are \$23.10. The \$2,500 mortgage runs for 15 years, insured by FHA under Title I. After local financial institutions had refused to co-operate, the financing was arranged with an out-of-town private source.

Both Helms and McDowell praise the local FHA representatives and the district director, Leo A. Kirk, for the assistance that had been rendered in getting the



FLOOR plan of the Chester houses is 24' x 30', with combination kitchen, dining room and a 14' 9" x 15' 3" living room—no basement. Heating unit is located in pit under floor, reached from outside basement window. TruCost figures will be found on page 116.



CHESTER houses are placed on 50' x 100' plots, with public water supply, gas and electricity, individual septic tanks.

project under way. "If a builder will listen to FHA suggestions and try to co-operate, he'll succeed," Helms said.

"It's more than a one-man job," he said. "The builder should have a first-class yard behind him. They have the contacts and the staff to handle financial, legal and advertising matters that would be difficult to handle alone."

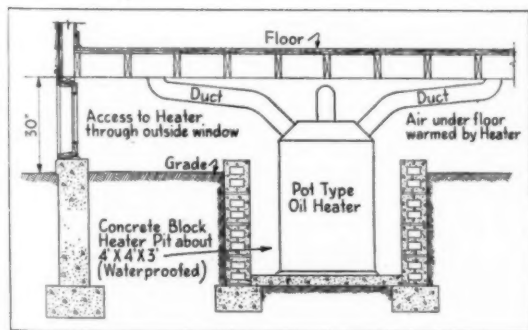
The houses Helms has built are 24 by 30 feet, placed on 50 by 100 foot plots. The location is on the edge of an industrial area where the land cost was very low. Public water, gas and electricity are available, but the builder had to install individual septic tanks for the

houses. The average lot cost, including improvements, is estimated at about \$175.

Houses are of frame construction with colorful asphalt roofs, double floors, no basements, gypsum board sheathing and plaster base, copper piping.

The heating system is an economical pot type oil burner with a thermostat. This unit is placed in a 4 by 4 by 3 foot pit constructed of concrete blocks under the floor. The unit is so placed that only 12 feet of duct work are required. It is reached through an oversize outside basement window. Because of the simplicity of

(Continued to page 108)



POT type oil heater with automatic control is placed in 4' x 4' x 3' concrete block pit under floor. Only 12' of duct work are required. Heater is reached through outside basement window. Air underneath floor is warmed by this system which eliminates cold floors.

"Ad" that Sold 18 Houses

ONLY one newspaper advertisement was needed to completely sell out P. E. Helms' Chester Homes project, although more were planned. This advertisement brought out such a crowd that all lots were sold the first week-end. The monthly carrying cost of the houses including taxes is \$23.10. It was found that the rent the average buyer had been paying was \$40 per month.

NEVER BEFORE

IN DELAWARE COUNTY!

A COMPLETE ALL-WEATHER COMFORT HOME

READY FOR INSPECTION, SUNDAY, DEC. 10

\$125

DOWN

\$20.90

PER MONTH

Anderson Avenue, Trainer 1/2 Block From Ninth Street
OPPOSITE TRAINER M. E. CHURCH

The Outstanding Features of This House Are As Follows:

- OIL HEAT
- COPPER TUBING
- J-M ROOF SHINGLES
- Lot 50x100
- Cement Curb and Sidewalk
- B. & S. Yellow Pine Floors
- Oil Heat
- U. S. Gypsum Lath and Plaster
- Complete Bath
- J-M Shingles
- Exceptionally Low Taxes
- City Water, Electricity, Gas
- Sound Construction
- Copper Tubing
- Shrubbery
- F. H. A. Insured

Never before in the history of home building has such a bargain been possible. This house is not a shell—not a resort cottage—but a completely finished attractive soundly built home of four (4) rooms and bath—completely decorated and ready to move in the furniture. Close to schools—factories—transportation—with city water, gas and electricity—on a tract of ground 50' wide x 100' deep—and taxes exceptionally low. The new United States Government F. H. A. Title 1 plus the sound business judgment and patriotism of the lending institution and builder makes these prices and terms possible for the first time in Delaware County. This home fills a great need in this community and for the family that wants to become home owners at a price much cheaper than rent, this is their great opportunity. For a few cents a day extra your life can be insured for the amount of the mortgage. We invite the public to inspect the sample house—attractively furnished by C. L. Morris. This house features Johns-Manville building materials.

Built by
P. E. HELMS, 2015 Melrose Ave., Chester, Pa.
Johns-Manville Building Materials Supplied by
W. S. McDOWELL Co., 1915 W. 2nd St., Chester
Sales Agent
F. FRANK DOHERTY, 1927 W. 3rd St., Chester



HOME of William H. Gilligan, Sheffield, Mass. builder, which had to be repeated by popular demand.

Double-Coursed Front Cover Home Brings Repeat Orders



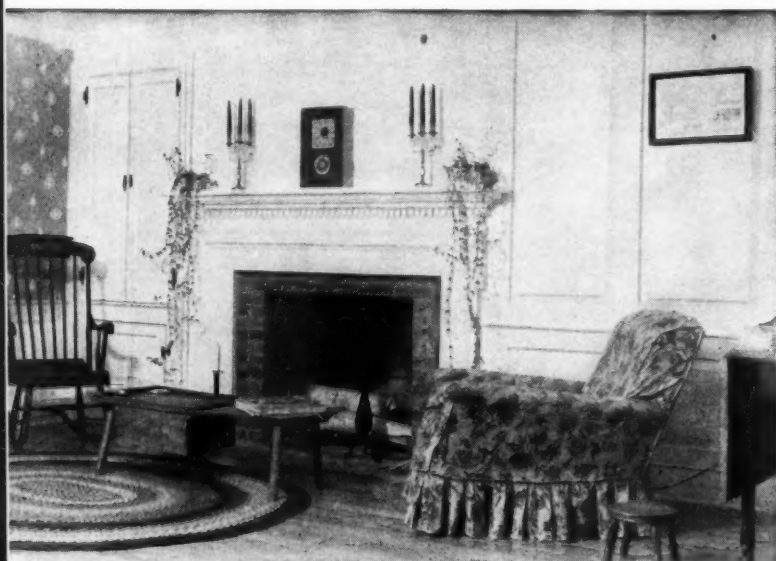
EXTERIOR shingles are stained a deep tile red, which contrasts nicely with the white shutters and rail fence. TruCost figures are on page 116.

Buyers "Beat a Path" to Door of Sheffield, Mass., Builder When He Put Up This Tile Red Shingle Home for His Own Use

THE old fable of the better mouse trap has once more been demonstrated—this time by a Massachusetts builder who built such a good house for his own use that the public literally "beat a path to his door" to demand more like it.

William H. Gilligan, of the firm of Gilligan Brothers of Sheffield, Mass., built this house for himself, his young wife and two small children. He put into it his accumulated ideas of years of practical experience, plus the personal tastes of himself and wife. He went to the local library, and in an old book on Colonial architecture ran across the newly popular idea of double-coursing, which was advocated by the old-time builders to provide a heavier shadow line, a warmer wall and a better looking design. He stained the shingles a deep tile red, and for contrast provided the attractively designed white shutters and a rail fence and gate.

The results have been startling. A constant stream of people have stopped to inquire about the house. It is on a main highway set back several hundred feet. Tourists from other parts of the country stop to take pictures and inquire for plans—it has become really a nuisance, Mrs. Gilligan complains. But from among the many persons



COLONIAL fireplace paneling, hardware and wallpaper give charm to the 13½ by 19½ ft. Gilligan living room as can be seen above.

who have stopped to admire the house there have come some real prospects. Gilligan has built four other houses of similar design in nearby towns as a result of this one job, and he considers it the best "advertising" he has ever done.

Important materials and equipment selected by Gilligan for his own home include the following:

EXTERIOR—Certigrade red cedar shingles, double-coursed 12" to the weather, stained a deep tile red with Cabot's stain.

LUMBER—No. 1 Douglas fir common framing lumber with fir gutters. Weyerhaeuser end-matched sheathing.

BUILDING PAPER—15 lb. Flintkote asphalt saturated felt.

PLASTER—National Gypsum Co.'s "floating wall" construction, with Gold Bond plaster board base with insulating foil backing.

HEATING—Fitzgibbons steel tube boiler with Tanksaver. Cooper automatic coal stoker, burning rice coal. H. B. Smith recessed radiators, Anaconda copper tubing used for entire heating system. Total cost of heating the house first year was \$75.

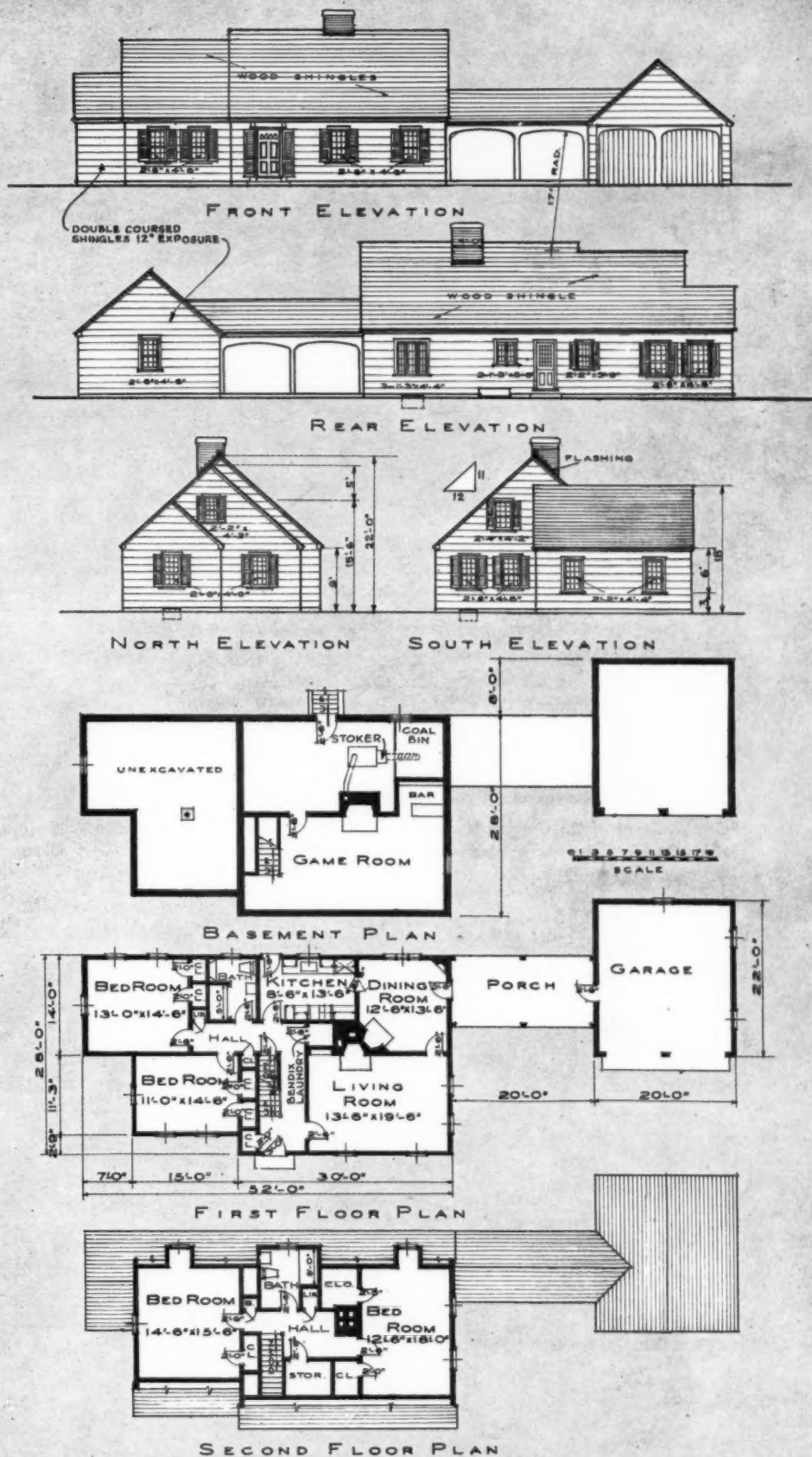
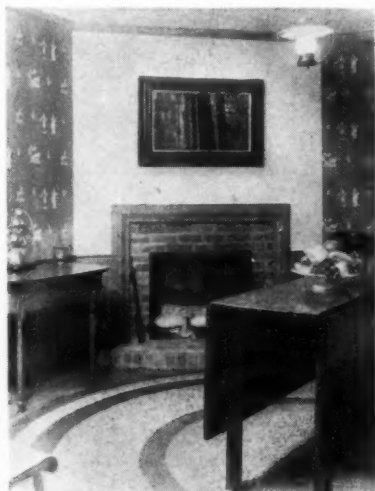
PANELING—Native New England Pine paneling with Min-wax light stain.

LINOLEUM—Armstrong linoleum in attractive colors in kitchen and bath.

LIVING ROOM FLOOR—Dierks' oak, random width.

(Continued to page 111)

CORNER fireplace in dining room.



Detailed Plans of Gilligan's Own Home—Drawn by Himself

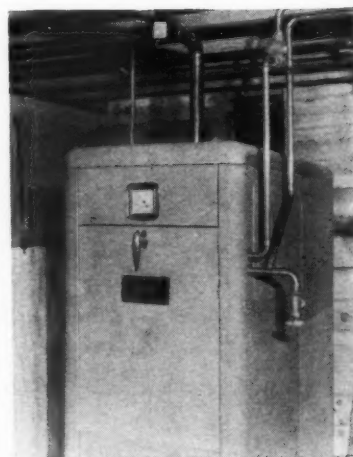
GILLIGAN'S house has a practical, livable plan with two bedrooms and bath downstairs, space for two additional bedrooms and bath upstairs. The large game room and bar are popular. The covered passage to garage is convenient in winter and pleasant in summer. There is an attractive corner fireplace in dining room. Gable proportions are nicely handled. See the next page for interior details.



POPULAR spot of the Gilligan house is the basement recreation room, with rustic fireplace and walls paneled in native pine with light stain finish. Concrete floor is painted a bright red. Plans and details of this Front Cover Home are shown on the two preceding pages.

Gilligan's Basement Recreation Room and Bar

Coal Stoker Unit Heats House for \$75



ECONOMICAL heat is provided by this steel tube boiler and a coal stoker. Both steam and hot and cold water pipes are of copper. Heating cost only \$75 a year.

GILLIGAN designed, built and operates this basement recreation room bar, at left, which naturally is a popular feature of the house.

How to Introduce a New Building Product

By George W. MacNeill

THE METHOD followed by George MacNeill in breaking into a new market with his product can be studied to advantage by salesmen and sales managers of other new building materials and products of merit—of which many are being developed in these progressive times. How to acquaint the builders with them and how to win for them acceptance and use have puzzled their sponsors. The system developed by Mr. MacNeill and outlined so clearly in this article, while referring specifically to his own special building material, would apply equally well to the introduction or market extension of many other new things in building materials, supplies and equipment.

—EDITOR.

TWENTY YEARS OF HUSTLING was the name of a book written some eighty years ago by a young man whose ambition it was to see his name, James P. Johnstone, in large gold letters on Broadway. Jim's life began when he suddenly discovered that he was an orphan at the age of twelve; a life packed with thrills and adventure; and to make it more interesting the story was true.

When I finished reading this book I thoughtfully pressed the two covers together and turning to father I said, "Dad, does Dick belong to me?" (I had raised Dick from a colt). Without raising his eyes from the evening paper he replied, "Yes, of course." And "Dad, can I have the old democrat wagon you discarded when you bought the new one with the round rubber tires?" This time he dropped his paper and turned on me with the question, "What in the world are you thinking about?"

A week later Dick and I left home. In the back of the old wagon was a case of Royal Purple Nursery Stock (value \$12.00); and wrapped in a neat leather case I had three pairs of Bradley Garrison's patented pruning shears. I was also an authorized agent for Hiram Gurney's Nursery Stock. That was thirty-eight years ago. My resolution was the same as Jim's—"I would sell something and never work for a day's pay." And to be more like the idol of my dreams I also left home without a dollar in my pocket.

Now you are saying, "What has all this to do with introducing a new building product or one that, while not new, still has its big market out ahead, like Dunbrik?" Well, just this. In all these thirty-eight years of commission-selling, Dunbrik is the best item I ever handled to make its own friends and create its own market.

Late in 1937 C. L. Carlsen & Associates, now known as the Chicago Dunbrik Manufacturing Co., Inc., put all of its money into a brick plant. Its owners were obliged to use credit in lieu of capital. There was no money to be spent for advertising, direct or otherwise; and as my job was to dispose of the output of the plant, I found myself in a very uncomfortable position. Just how was I to get out from under? After giving the matter careful consideration I resolved to pass the buck on to the product itself. In other words I resolved to give this building material the supreme test, sink or swim. Here is how it was done.

First I compiled a "card file" which I consider the



GEORGE W. MacNEILL Loses No Time Chasing Building Reports

foundation of any successful selling campaign. It included the names, addresses and 'phone numbers of all architects, general contractors and mason contractors in my territory. And I created another class of prospective buyers which I labeled "owner-builders." The latter do not employ an architect and seldom a general contractor. In the upper righthand corner of each card I put a capitol letter that classified the prospect. "A" for architect, "G" for general contractor, etc.

Next I made a rough sketch of my territory and divided it into lanes four blocks wide (a milk man would say routes). Nineteen numbered routes. I arranged my cards in proper order so that my next call was always just around the corner or perhaps in the same block. I put a rubber band around each group of cards and placed them in their right order in my card file box, with the alphabet index in the rear. Then I went to our printer for business cards, and on the back of each I wrote with a red pencil:

"Prices: Light and Dark Greys \$22.00
In Iron Oxide colors \$24.00"

On the 6th day of July, 1938, at 8:00 A. M. I left the yard with 40 Dunbrik in the back of my Model "A," (20 brick of one color and 20 of another) planning to make 20 calls each day, the first five days of each week. This I found to be easy, as most of my prospects were either out or busy; and conversation was not a part of my program when covering the ground the first time. I left for each prospect two samples, one of the natural greys and the other a colored brick. I always laid one brick down flat and stood the other upright on my card. If the prospect's office was in his home and no one answered the bell, I left my samples and card under the mail box in the hall.

Right here it is important to say that whenever possible I wrote the name of my (Continued to page 105)

THIS single-room log sided cabin shows the basic structure of the smallest unit of Log Cabin Builders, Inc., Minneapolis, Minn.; such a unit can be added to as desired, kitchen, one or more bedrooms, etc., being placed at ends for an H-shaped layout.



Cabin Specialists Build Volume Business

UP IN the "North Woods," Chester LaSalle and Harry Ledahl, president and treasurer, respectively, of Log Cabin Builders, Inc., Minneapolis, make a specialty of lake shore cabins.

"We had the idea," says Mr. Ledahl, "that it was possible with systematic planning, through volume building and volume buying, to build for Mr. Average Man his dream of a woods or lake shore retreat at a very minimum cost."

In the two years since the launching of the business they have proved the soundness of their ideas. Their concern started with three employees on the payroll and one prospect for a cabin. Now there are 54 craftsmen and 11 foremen in the field. The office force has grown to nine people and the yearly output of cabins and other structures is in excess of one hundred.

The company now has 150 basic cabin designs from which one can choose almost any type of structure he desires. There is one price for each type of cabin re-

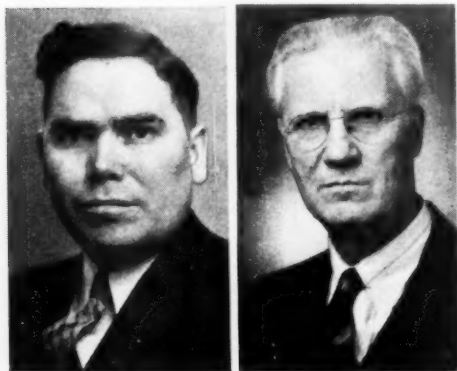
gardless of location. A two or three bedroom cabin, complete with heating, lighting and other comforts, can be built in four days if necessary.

The company uses only quality materials. The insulation is Palco-wool fill $1\frac{3}{4}$ inch thick between the studding. Standard plumbing fixtures and B. F. Nelson composition shingles are used. The Rolscreen Pella windows with steel frame, wood sash and Rolscreens are completely equipped with weatherstripping to do away with loose, leaky and rattling windows. A storm window fastens on the inside of the window and swings out with it.

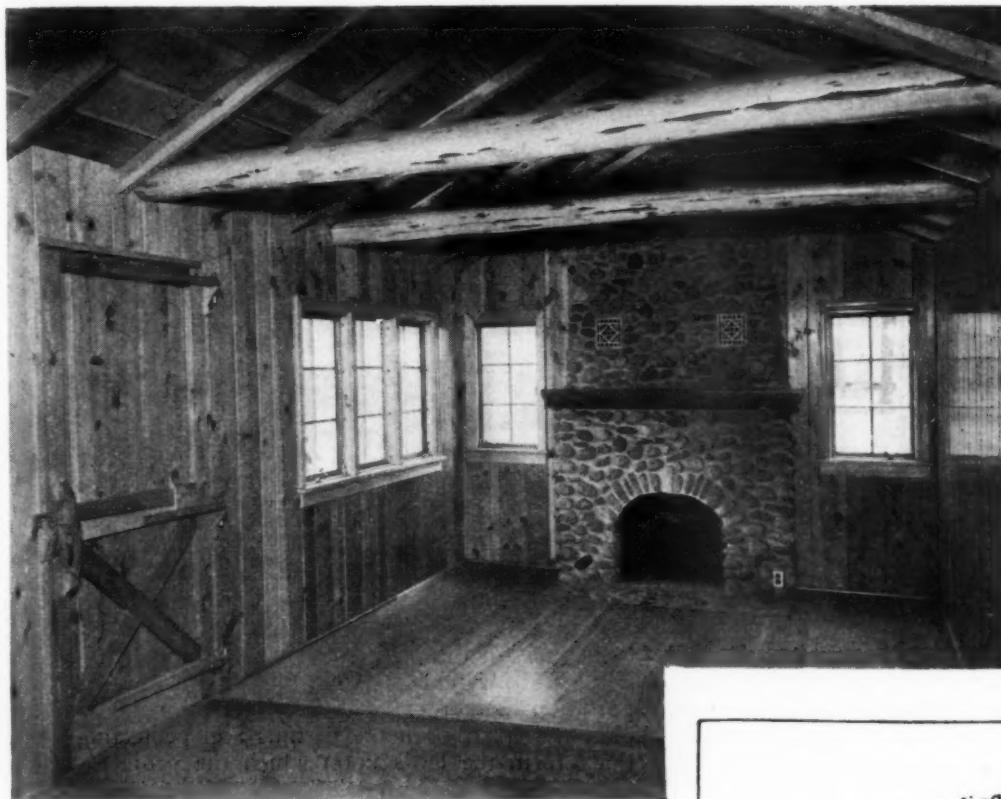
In some of the cabins solid brass hardware is used but the wrought iron rust-proof fittings are more popular because of their rustic appearance. Other cabins have wooden hinges and the doors are equipped with old-fashioned latch strings. The Superior Fireplace heat circulators which are installed in the fireplaces prove very satisfactory for these cabins in northern climates. Log Cabin Builders, Inc., has worked out a plan of staggering 8-inch and 6-inch log siding to give the appearance of a genuine log cabin.

The company buys seasoned western lumber, a million feet at a time, at a big saving which is passed on to the customer. These cabins can be constructed for as low as \$385. On the other hand, as much money can be put into a cabin as the customer desires to add to the completeness of his vacation home. If he wishes, he can start with a single room cabin and add to it later. If desired, a bedroom and kitchen can be added at one end of the living room, while two more bedrooms can be added to the other end, making an "H" shaped three-bedroom cabin.

"To help keep our costs at a minimum," says Mr. Ledahl, "our carpenters, who are hired by the year, are carefully trained to waste no material. If a carpenter makes a mistake in the building of a cabin, he is required



BUILDERS Chester LaSalle (left) and Harry Ledahl, president and treasurer, respectively, of Log Cabin Builders, Inc., Minneapolis.



INTERIOR of single room cabin shown opposite. Note wood hinges and latch on entrance door to add a novel rustic touch. To increase size of this basic unit, window openings at the ends of this room can be easily removed for the doorways required to any rooms which might be added later.

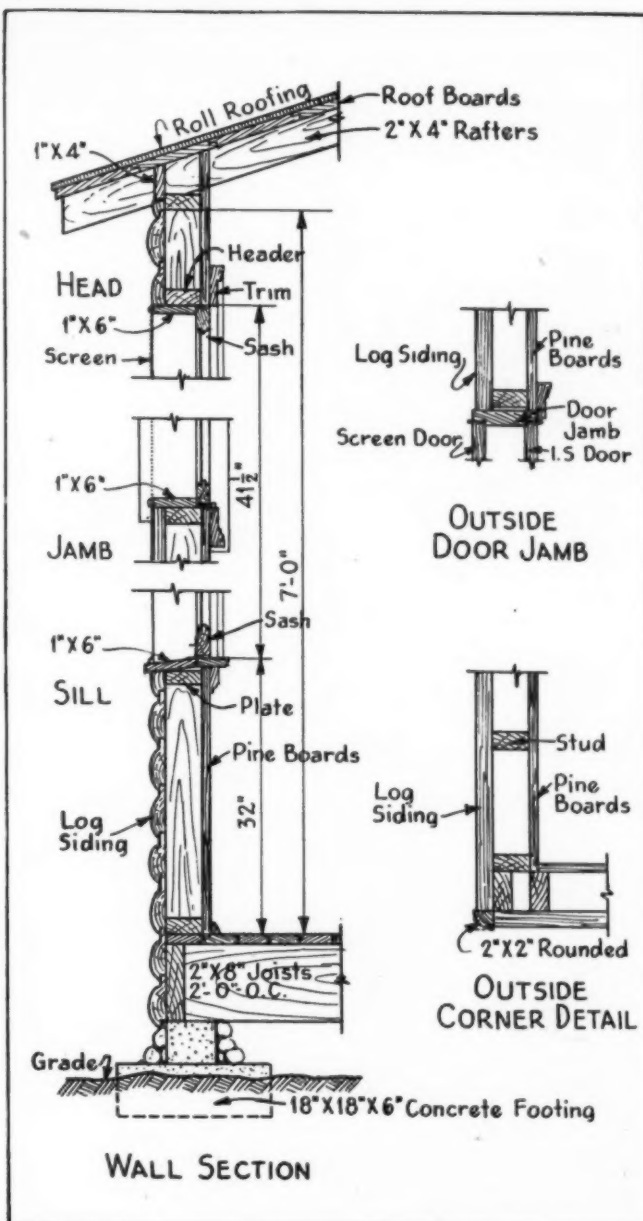
to return to the cabin, regardless of distance, and make it right."

To avoid expense of a painter following the building crew, the company does not do any decorating or staining. Because it does not take an expert or expensive equipment to stain a cabin, many people like to do it for themselves. Some of the better cabins are paneled in redwood or knotty pine.

The company's first cabin was erected at Cross Lake, Minn. Its cabins are now being built in Wisconsin as well as the extreme northern parts of Minnesota. Just recently a cabin was built on Flag Island, Lake of the Woods, for which all material had to be hauled 49 miles by water. Mountain resort owners of Montana are also interested in the project.

The company in the two years since its beginning has moved from desk space to an entire building, and Mr. Ledahl says it is now necessary to expand still further. It is about to open a Lake Shore department to handle Lake Shore real estate only. This department will take care of those who have not already acquired a site. Aside from regular cabins, these men have built homes in rural districts, as well as in resorts and on dude ranches. Their activities have included elaborate and palatial summer residences running into many thousands of dollars. The better grade cabins can be financed under FHA Title 2 for the customers who desire it. The less expensive unlined cabins do not qualify under the present FHA plan.

The Log Cabins, Inc., display of miniature log cabins, home and rural buildings won first prize blue ribbon at the "Home Beautiful Exposition" held in the Minneapolis Auditorium last March.—Wackerbarth Graham.



RIGHT: Typical construction details showing cross section and framing at openings of basic unit, as built by Log Cabin Builders, Inc.

miles west of Milwaukee all during the ensuing week. Some came from nearby Waukesha, but all of them, Stark believed, had read his ad. As a result, six deals for half-acre homesteads were closed that week, two more later and an A-1 list of prospects to work on for future sales was accumulated.

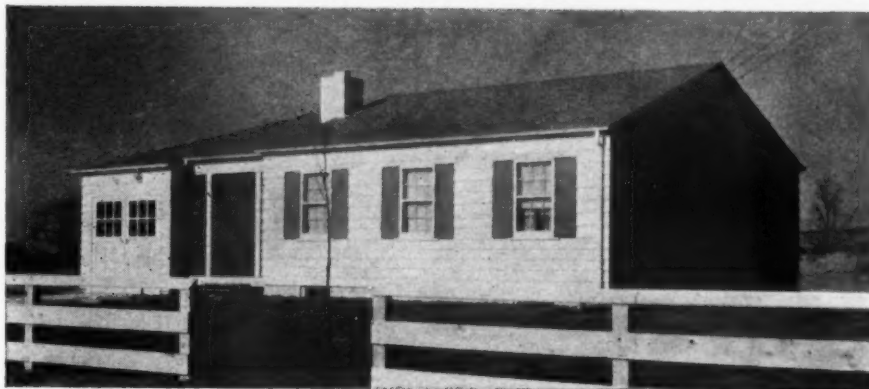
The ad told the whole story. The upper half carried a large plat view of Calhoun Farms in red and green, showing houses spotted on various sites. Across the sky appeared Stark's slogan in large black type, "Live Better for Less," which is much better sales psychology than touting a "low-cost housing development," according to Stark. The lower half of the ad carried a carefully prepared and detailed description of every feature of the development, its houses inside and out. In justification of this, it was felt that truly interested prospects would read most of the descriptive matter, that it would go far toward urging them to make the inspection. Much emphasis was placed on the accessibility of Calhoun Farms to Milwaukee via Rapid Transit, whose station is 200 feet from the development entrance, and on which a \$1.75 unlimited weekly pass to all parts of Milwaukee proper is obtainable.

Carefully Planned Houses

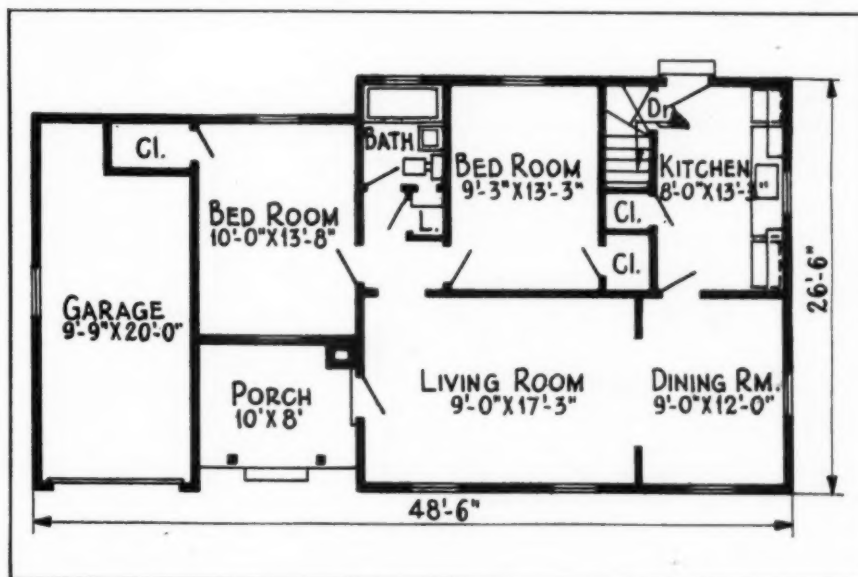
In this "first completely planned neighborhood" near Milwaukee, there is room for 90 houses on the first section of the 160-acre farm being subdivided. There are no lots for sale. The plans which were prepared in the office of the A. P. Stark Company consist of two basic layouts for which an almost endless number of variations have been worked out. Each occupies at least a half-acre of land, so there is plenty of light and air for each.

Three of the variations for the one-story plan are shown at the right. These are four and five room size, depending on whether the extra bedroom is built between the garage and the house or as a wing on the opposite side, as shown in the lower illustration. The arrangement of the rooms in the nearly square portion, 26'6" by 27'6", remains exactly the same in all cases, changes in exterior appearance being achieved by reversing the plan and altering the roof lines.

Because of the basic similarity, there has been economy in building the homes. Selzer-Ornst Company of Wauwatosa has done all the building; this firm regularly does general contracting on large commercial, public and industrial projects. Quality construction and materials are in keeping with the careful planning of both houses and sites. There is a full,



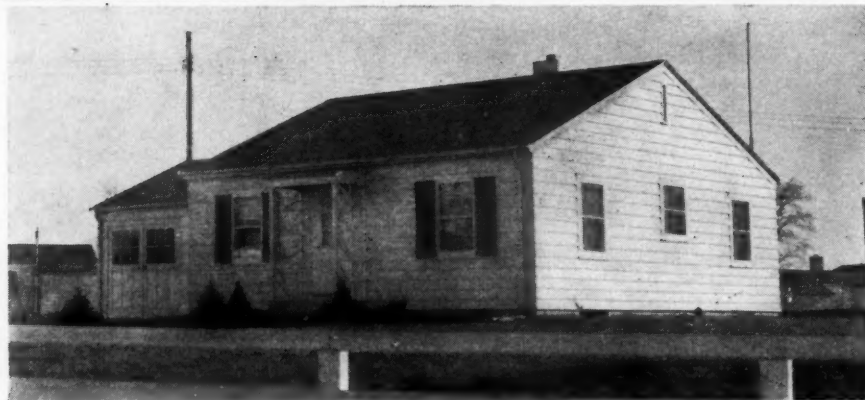
THREE variations of the one-floor basic plan below are shown in the views above; clever shifting of the entrances, different locations for the extra bedroom, changing roof lines and reversing the plan have entirely changed the appearance.



THIS plan, having a main portion 26'6" by 27'6", has been used with variations for most of the homes at Calhoun Farms estates; TruCost Figures are given on page 117.



THE two-story type of home at Calhoun Farms has two extra bedrooms upstairs. Selzer-Ornst Co., Wauwatosa, Wis., built these houses.



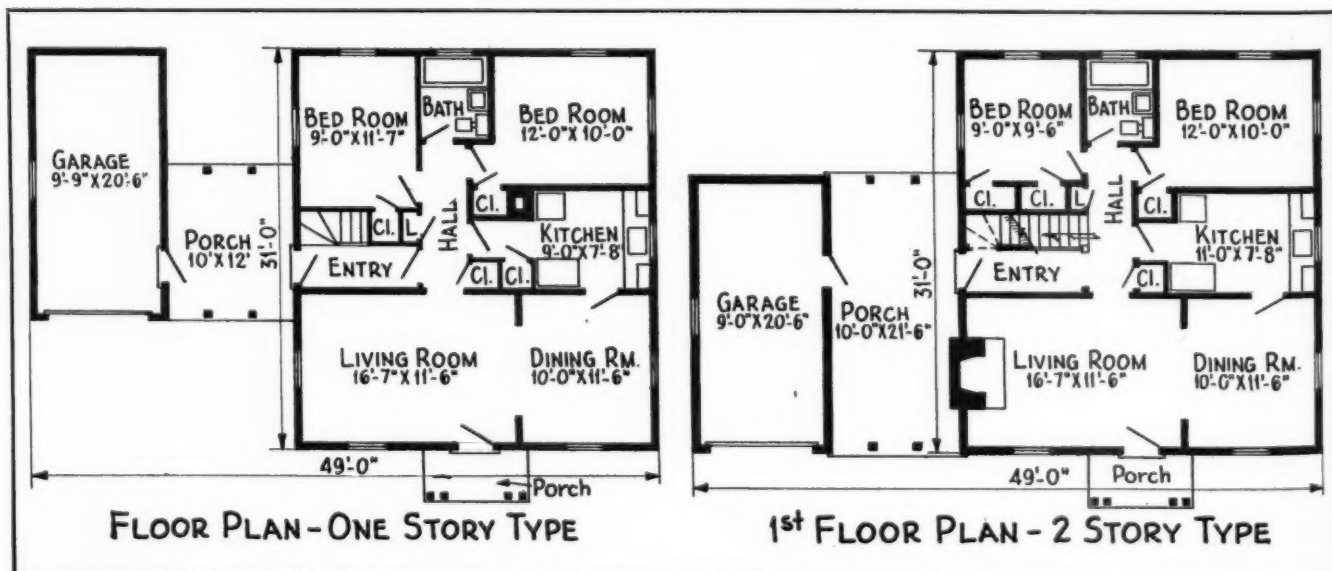
THE one-floor variation of a floor plan similar to the two-story design was used for this house. Both of these plans appear below; TruCost Estimating Figures will be found on page 117.

roomy basement under the main portion of the house; this contains a Mueller furnace and built-in laundry trays. The frame construction is insulated throughout with 2 inches of Gimco rock wool. Heating cost is estimated at as low as \$50 a year. Screens and storm sash are provided for all the windows and doors. Other well known products used at Calhoun Farms are Andersen basement windows, I-XL kitchen cabinets, and Certain-teed asphalt shingles. Calhoun Farms has been planned as an all-electric community, many of the homes being completely equipped with electric water heater, water pump for individually driven well, and a G-E planned electric kitchen with range, refrigerator and garbage Disposall. Ample and reliable septic tanks are used for sewage disposal.

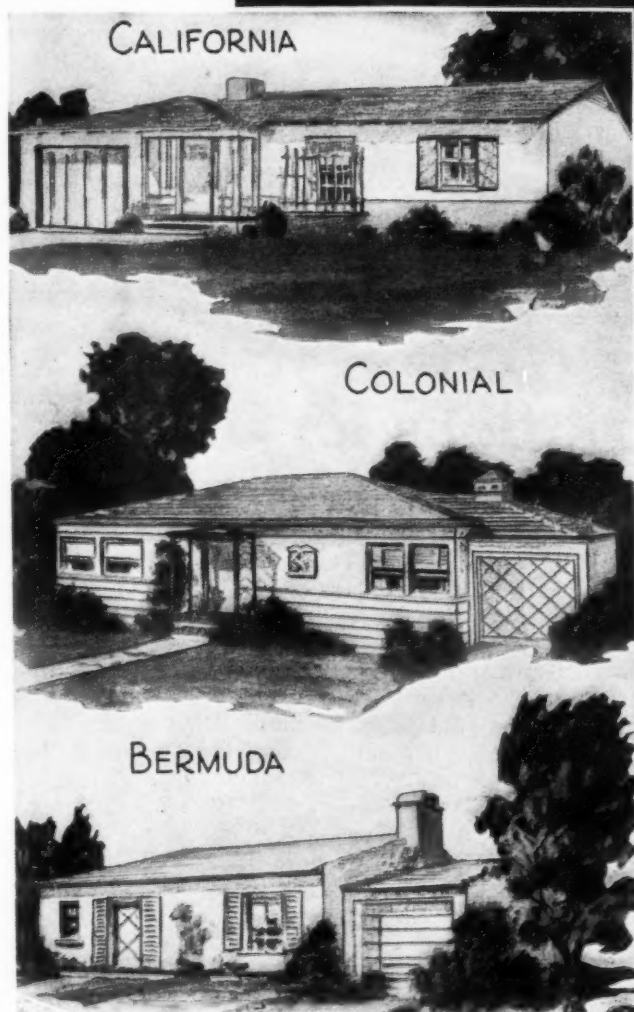
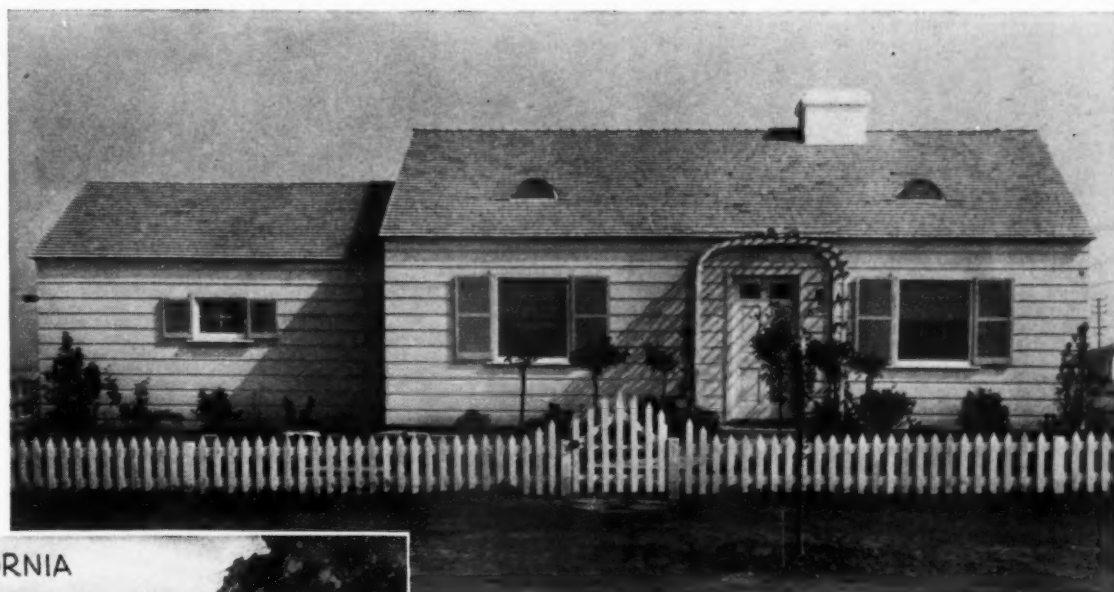
and equipment are similar to that already described.

The A. P. Stark Company offers several different plans of financing with FHA-insured mortgages available on all homes. The prices quoted include all extras with no unforeseen expenses. Each plot is graded, planted and landscaped; attractive fences and lamp posts run throughout the development.

In commenting on the objective in the creating of Calhoun Farms estates, Mr. Fortney Stark stated, "Homes at low rental cost have been our aim. We know the homes folks want today must truly be the kind they can pay for as easily as they now pay monthly rent in the city. This has often been claimed but not always true. However, today Calhoun Farms can make it true for any family now paying \$30 to \$40 a month rent."



THE West-Side Village, Los Angeles, Cape Cod type model home. Tru-Cost figures appear on page 118.



California 4-in-1 Design

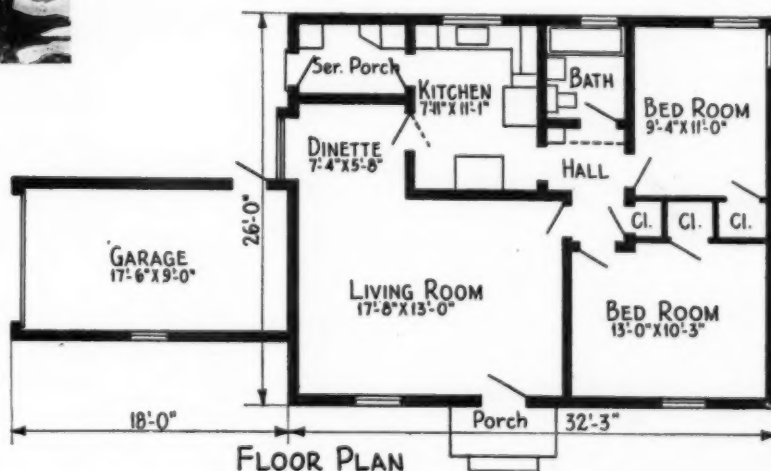
AT West-Side Village, Los Angeles, as developed by Fritz B. Burns, mass production of attractive little five-room homes is now under way; precutting methods using power equipment are employed. An economical basic plan has been worked out, as shown below, and several types of exterior styling allow appearance variations without departing from the economies of a well engineered plan. These four designs are models open for inspection.

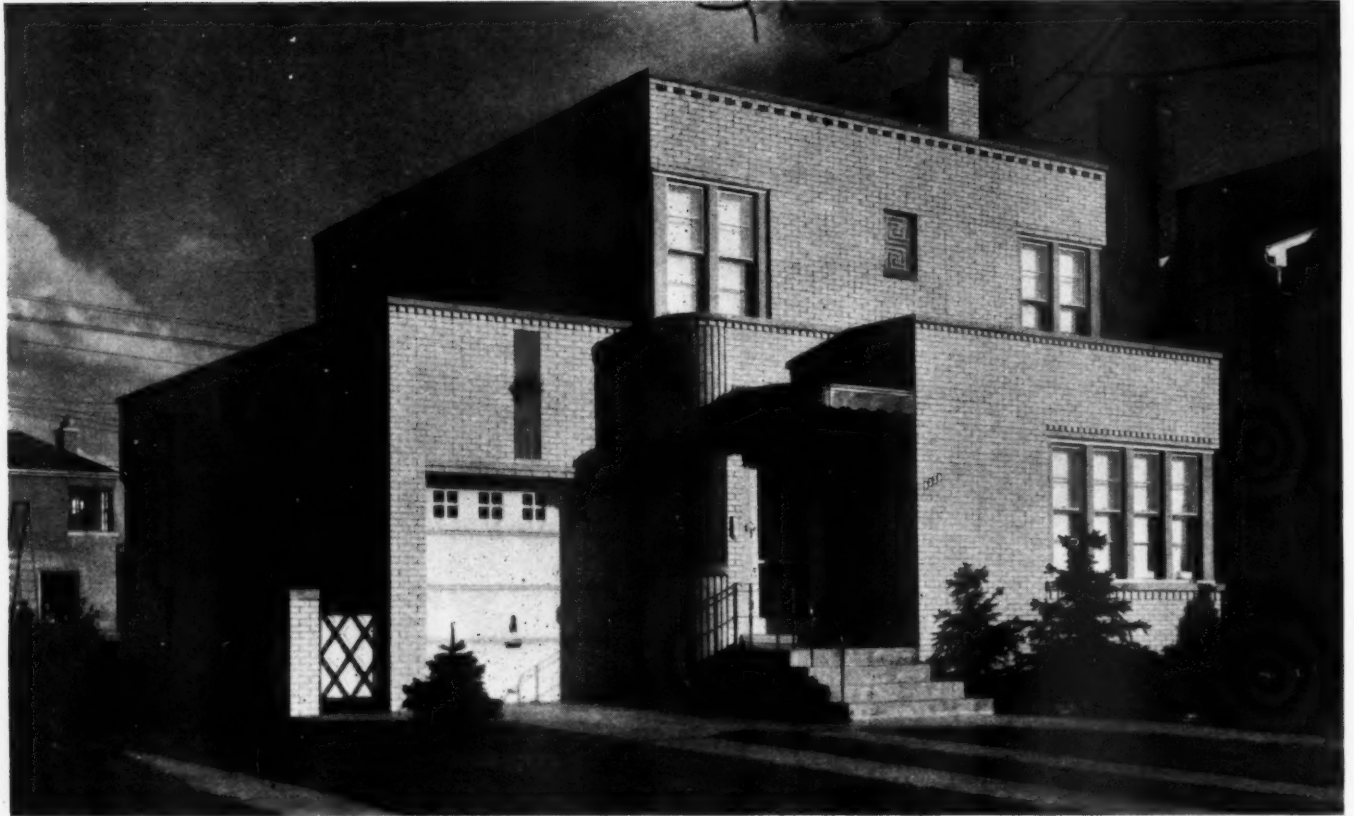
The Cape Cod design above has the exterior finished in Ponderosa pine siding, while the other three designs—the California, the Colonial and the Bermuda—sketched at the left, have exteriors of wood and stucco. Other points of construction and equipment of these houses include redwood sills, red cedar shingles, grade-marked framing lumber, hardwood floors, standard plumbing, Thermador electric bathroom heater, automatic water heater, Overhead garage doors, and three coats of lead and oil paint.

Simple rectangular plan for the 50-foot lots used, and no waste space add to the economies which result from the complete developing and building job done at West-Side Village. FHA-insured loans are available for these houses. J. P. Campbell was the builder.

ABOVE: Three other exterior variations have altered roof lines, entrances and period details to fit the same floor plan as the house above, without major changes.

THE basic plan at the right allows the garage to be on either side; as shown, it would have another window at the side in the front bedroom; if the garage is placed alongside bedroom, extra windows then can be inserted in the end wall of the living room.

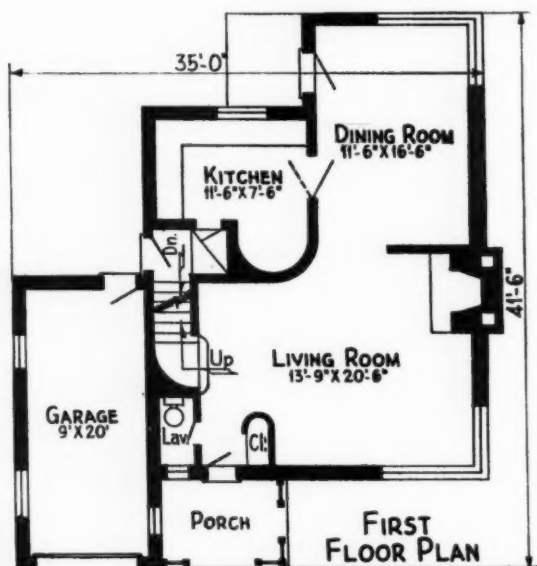




Modern and Period Variations for 6 Rooms

THE three exteriors shown on these two pages fit the compact plan below with slight variations in the placement of garage, entrance and living room projection. Architect Elmer C. Carlson of Chicago designed and supervised the construction of these interesting houses which are so unusual in their exterior treatment. The one above has cream matt finish pressed brick, on the solid exterior walls 10 inches thick; 3 coat plaster is applied to Nu-Wood base over furring. Roof is built-up 4-ply asphalt; windows, Truscon double-hung. The Overhead

garage door is especially designed to pick up the Modern Classic lines and details. The floors throughout are oak except Nairn linoleum in lavatory and kitchen and tile in bath. Studs and joists are kiln-dried yellow pine and a concrete terrace over the garage is accessible from one of the bedrooms. Four inches of Johns-Manville rock wool were used over the second floor ceiling; the home is heated with a G-E gas-fired winter air conditioning system. Other materials and equipment are Crane plumbing fixtures, Red Seal wiring system and West Wind kitchen ventilating fan.



THIS floor plan of the six-room home as shown directly opposite carries out the modern treatment with corner windows, semi-circular breakfast alcove and the curved walls. In the house at the top of this page, a similar plan is used but the garage is moved back flush with the body of the house, rear wall of the kitchen aligns with the dining room, and the living room is enlarged by the projection to the front. TruCost figures for this design are on page 118.



THE French styled exterior above is another variation of the basic plan on the opposite page. Like the two modern versions, Architect Elmer C. Carlson has given it a highly stylized treatment around this very efficient plan. Construction and materials, except the exterior stone and shingles, are similar to these other two Chicago houses.





Demonstration Home in Beverly Hills

ADAPTED from New Orleans Creole style, this demonstration home in Beverly Hills, Calif., displayed a number of features typical of the better type home building in Southern California. It was built by Moiso & Jordan and designed by Ray Strahmann of the same building firm; Bullock's Bureau of Interior Decoration, Los Angeles, furnished it as a model home.

Construction is frame with exterior of stucco and redwood siding used vertically at the gable ends. The same wood is also used for exterior finish with the exception of sugar pine shutters and red cedar shingles stained dark red on the roof. Windows are equipped with double-hung wood sash except casements over the

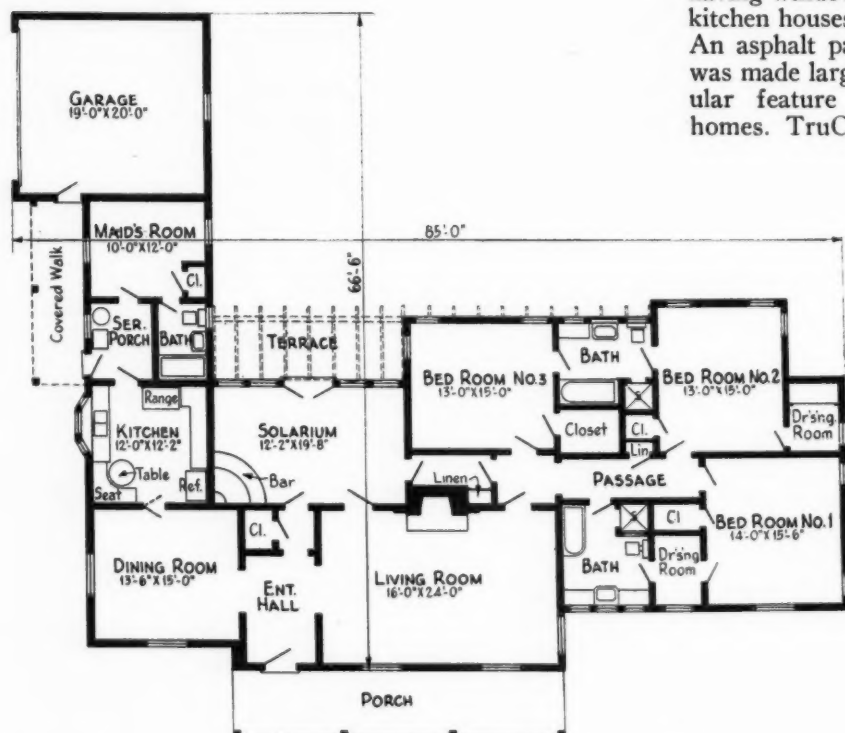
kitchen sink. Floors are oak. Corbin brass hardware is used throughout.

Some of the novel planning and equipment features of this house of eight rooms and attached garage are the solarium overlooking the rear terrace and having a curved bar built into one corner; a corner breakfast alcove in the kitchen; extensive use of hand-made tile for baths, showers, kitchen and front and rear porch paving.

Two separate forced air furnaces are used for heating and ventilation.

Other interior finish materials are painted white pine trim and millwork, and wallpaper used in the bedrooms and dining room as shown on opposite page.

Closet and storage space is exceptionally generous. Two of the bedrooms are equipped with dressing rooms having windows for good light. The service porch off the kitchen houses the laundry and water heating equipment. An asphalt paved turning court in front of the garage was made large enough to be used for badminton, a popular feature of many recently completed California homes. TruCost figures for this home are on page 119.



FLOOR plan indicates the rambling layout of this Beverly Hills demonstration home which has eight rooms and three baths with two-car garage attached; a number of planning features would be readily adaptable to homes in other sections of the country.

THE all-purpose room in this Beverly Hills model home, built by Moiso & Jordan, and furnished by Bullock's, serves as a solarium (so indicated on plan opposite), as well as card room or den. Grass cloth wall covering is laid with grain running vertically to give the effect of a wainscot, and horizontally on the wall above.



DINING room walls above the white pine wainscot are finished with scenic wallpaper. A nicely detailed cornice trims the ceiling line where the walls join the vaulted ceiling. Note the louvered doors to the entrance hall.



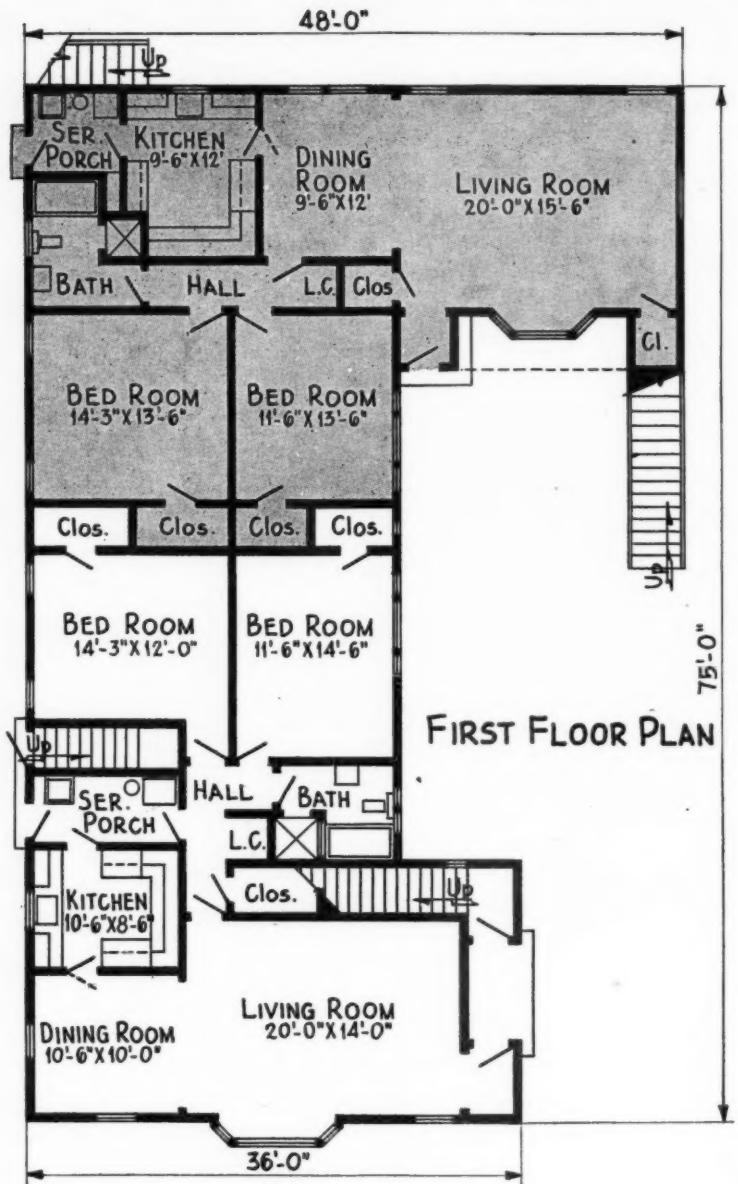
THE living room walls are painted and given a smooth sand finish. Fireplace is of split brick laid up in a herringbone design. Large size windows are placed for good furniture arrangement.



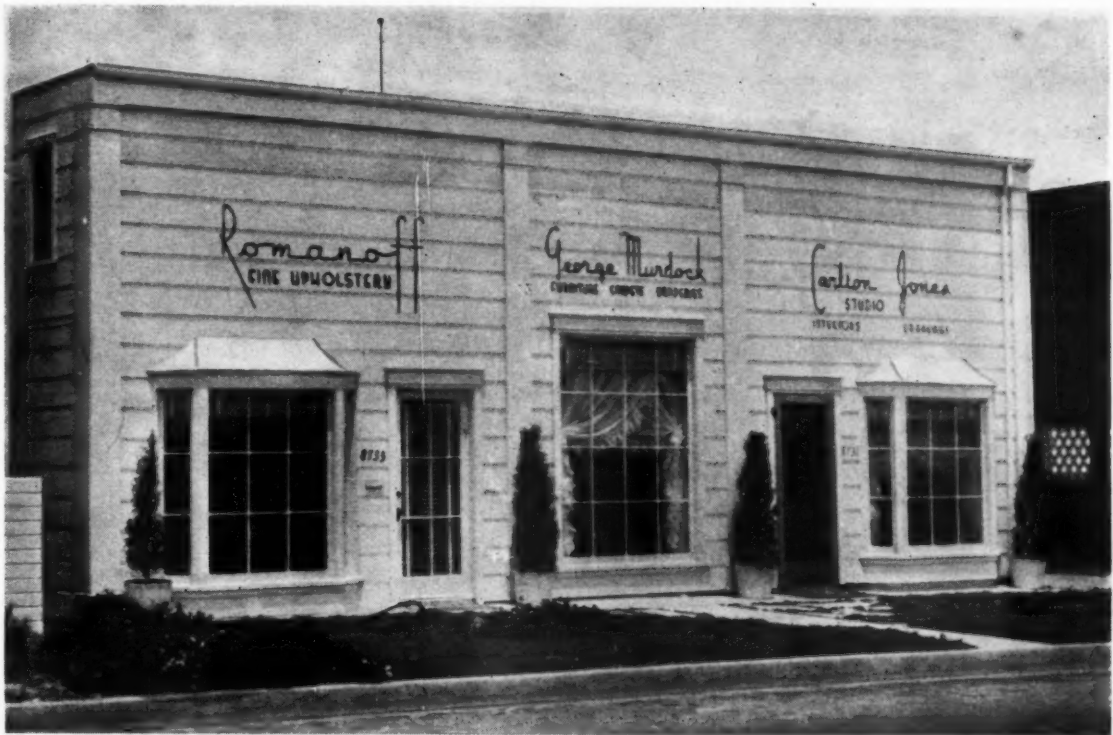
Smartly Styled in Western Pines—California Four-Family Building

THIS two-story four-apartment building in Los Angeles, Calif., has been given an unusually attractive exterior treatment worked out in Ponderosa pine siding by Lester G. Scherer, architect. Extra wide boards and battens on the first floor contrast with the horizontal flush siding above and have been very cleverly combined with the scalloped detail where they meet. The saw-tooth cornice further adds to the decorative effect which has been economically and simply achieved. Carefully designed shutters, windows and entrances in a modified California Colonial styling of sugar pine add to the appearance.

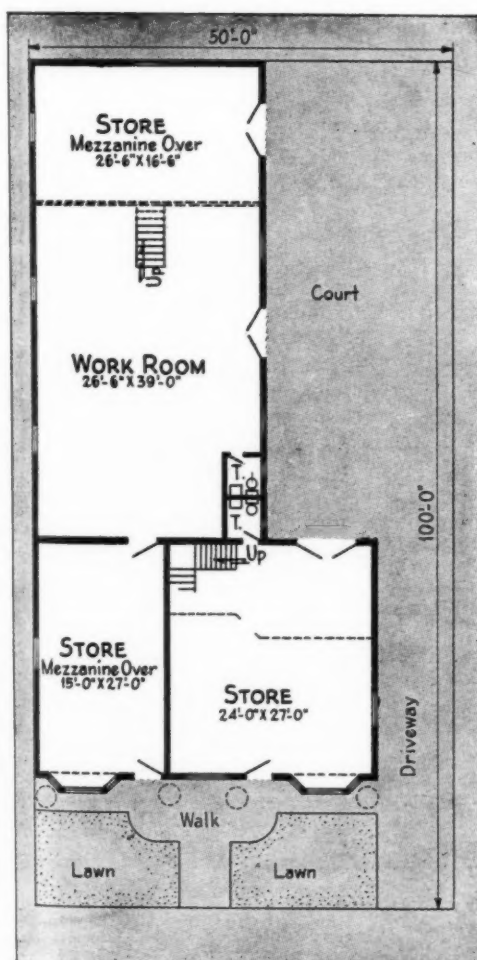
The plan presents some novel features. Living and dining rooms are thrown together to give more openness and light. The kitchens are efficiently laid out in a U-type plan, allowing maximum utilization of the 10'6" x 8'6" size; service porches adjoining house the utilities. Shower stalls are included in the baths. The bedrooms have good closet and wall space. In the front, stairs to the upper apartment for both service and entrance are on the inside, while at the rear both stairways are on the outside of the building, the front one landing on a balcony. California Engineering & Construction Co., Los Angeles, general contractors.



TWO-unit shop building, with extra facilities at the rear, was designed by R. M. Farrington, architect; it was built by D. Witherbee Co.



Los Angeles Two-Unit Shop Building



LIKE the California apartment building opposite, this small shop project is both economically and attractively designed to use Western pine throughout. Architect R. M. Farrington selected a 12-inch Pickwick pattern No. 2 Ponderosa pine siding for the exterior applied directly to the fir studs. Entrance doors and windows are sugar pine, while the window frames and all trim, both inside and outside, are also Ponderosa pine. The flat roof is covered with composition roofing.

Use of two bays and the large central window gives the front elevation a smart styling such as will attract high class trade to the smart shops which tenant the building. At the same time, this type of construction keeps the cost down, allowing low overhead for businesses. Costs are estimated at about \$1.50 a square foot; however, the climatic conditions of California allow certain building economies not found in other sections of the country.

The plan is of a simple L-type. Extra floor space is provided by the mezzanine over the first floor at three points. A corner of the 50 by 100 foot site is occupied by a rear court which is connected to the street by a side drive; double service doors allow delivery access. D. Witherbee Company, Los Angeles, contractors.

THE plot and floor plan at the left indicates the relation of the shop building to the site; a driveway along one side gives access to a court onto which additional entrances open. The rear portion of the building can be used as store facilities.



STREET and rear views of 11-unit rental group developed in attractive bungalow court style.

Low Cost Housing Provided without Subsidy

Bayport, Minn., Project Demonstrates How Low Rental Apartments Can Be Paying Investment

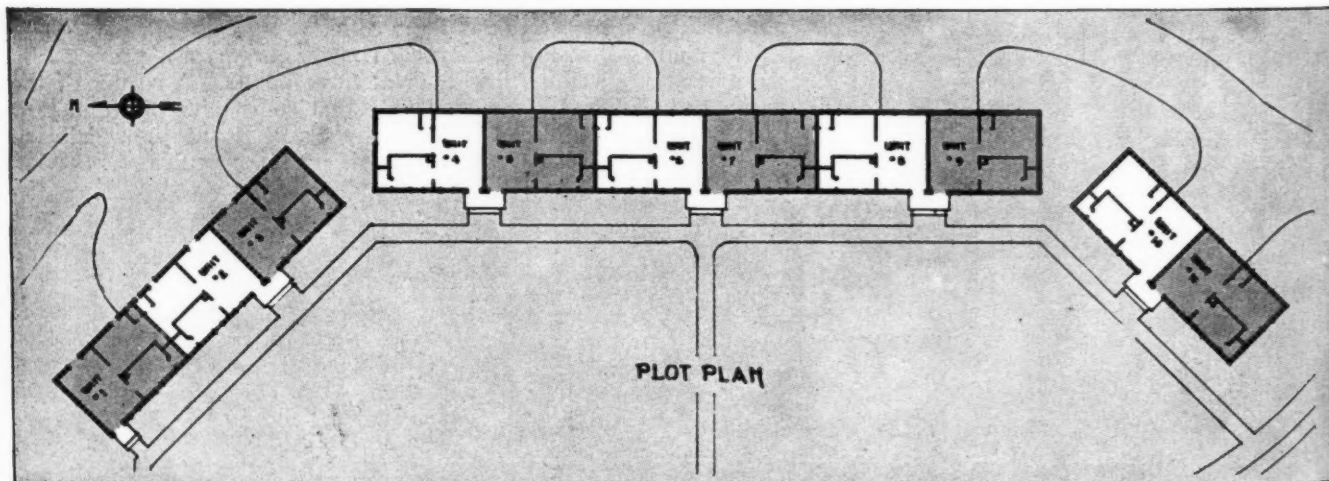
SINCE workers employed in Bayport, Minn., have never been able to find sufficient housing to provide them with attractive, livable homes at a reasonable cost, a group of Bayport business men headed by Fred Andersen of the Andersen Corporation recently decided something should be done about it. There was one stipulation, however, to which they all agreed: Whatever was done, it had to stand on its own feet and be a paying proposition—no subsidized housing. Also it was agreed that to make a sound investment there must be no skimping on such essentials as footings, foundation, structural framework or windows.

Bayport is a town of about fifteen hundred, located eighteen miles east of St. Paul. The Bayport Realty Company was formed, and a plot of land 340 feet by 150

feet was purchased for \$700. Architects Slifer and Cone of St. Paul were engaged to draw plans and specifications. A bungalow court arrangement including eleven family units was decided upon at a cost of \$23,300.

Financing was accomplished by selling common stock in the amount of \$10,000 and the balance by a \$14,000 loan secured by a ten-year first mortgage at 5 per cent interest. Required monthly payments are \$100 with full prepayment privileges. Stockholders include over one hundred residents of Bayport with individual amounts of stock held ranging from \$50 up to several hundred dollars.

The stockholders have all agreed that no dividends will be paid until the mortgage has been reduced at least 50 per cent.



PLOT plan shows how Bayport rental housing units were grouped to take advantage of site as illustrated at top of page. These Oak Terrace apartments face west to catch the afternoon sun.

RIGHT: Upper view shows corner of living room looking toward kitchen and bedroom in low-cost Bayport, Minn., rental project. Lower view of basement indicates arrangement of low-cost oil heating plant and garage space.

Each apartment unit includes a living room, a bedroom and a kitchen with built-in cabinets and sink. A lavatory is installed in the bedroom while a toilet is provided in a separate closet off the bedroom. A shower stall in the basement provides necessary bathing facilities. Space for the family car is also provided in the basement. Each family has a gas hot water heater and hot and cold water connections for laundry purposes.

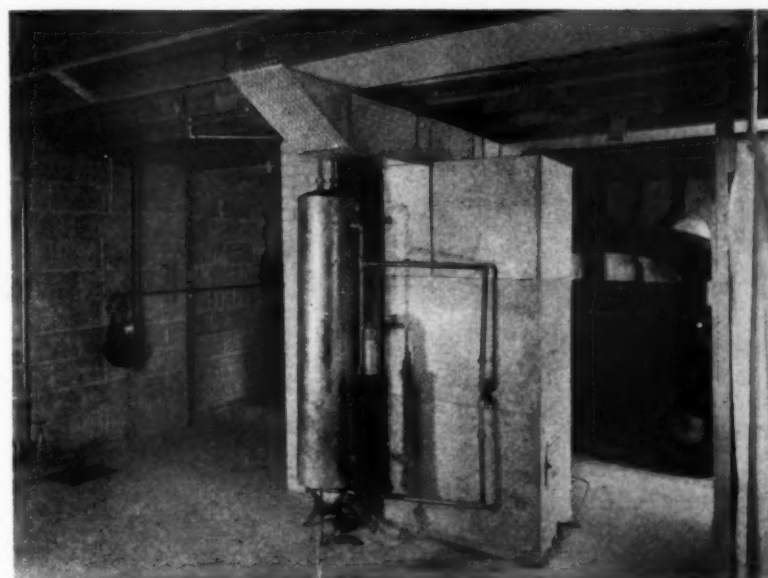
Each family unit has its own hot air heating plant. The heating unit consists of a modern pot type oil burner with controlled gravity feed. This unit is capable of delivering at least 50,000 BTU per hour at the register. Engineers who installed the units claim that the heating cost for a one-family apartment will run about \$40 per season, and this where temperatures run as low as 30 degrees below zero.

Balsam-Wool was installed between the ceiling joists while one-half inch Nu-Wood plaster base is used on all outside walls and on both sides of interior walls separating family units.

Windows throughout are Andersen Narroline double-hung windows and casement units complete with weatherstripping, storm sash and screen. All outside entrances are equipped with combination storm and screen doors.

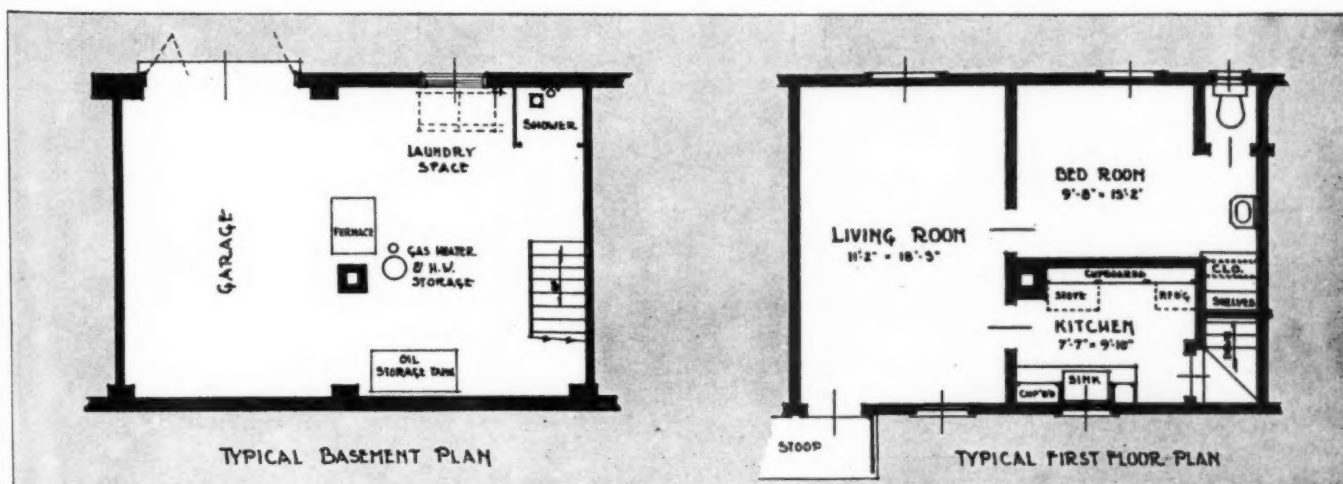
All structural materials were selected on a quality basis. Floor and ceiling joists were No. 1 Douglas fir, Weyerhaeuser 4-Square lumber; studs, No. 2 Douglas fir, 4-Square; siding, 4-Square, $\frac{1}{2}$ x 8 W.R.C. bevel; finish flooring, $\frac{5}{8}$ x $2\frac{1}{4}$ clear birch except $\frac{3}{8}$ 3-ply fir plywood for linoleum in kitchen and toilet, over diagonally laid sub-floor of No. 3 fir shiplap; interior trim Ponderosa pine.

Other quality materials included Ruberoid Tex-Tab shingles laid with Maze 3d hot dipped zinc coated nails,



Armstrong linoleum, and 3-coat white lead and oil paint job on exterior and interior.

All eleven of the family units are now occupied and there is a waiting list in the event vacancies occur. Rentals for units vary from \$20.50 to \$22.50. The gross income is \$235 per month.



BASEMENT and first floor plan of typical low-cost unit; basement garage entrance is from the rear. Shower and laundry trays are grouped together at the opposite side of the basement.

Shop-Built All-Steel Utility Buildings

A GROUP of twenty different prefabricated steel utility buildings at the new Irwin Works of Carnegie-Illinois Steel Corporation, Pittsburgh, make up one of the largest scale demonstrations of prefabricated panel type construction ever attempted. All panels in these structures were fabricated from light gauge flat rolled steel sheets. The various units, some inside the plant buildings and others outside the main mill buildings, located as necessary to serve the various departments most efficiently, cover a wide range of sizes and shapes. Three are two-story units, with offices on the first floor and wash and locker rooms on the second. Others serve exclusively as offices, but most of the units are wash and locker rooms including shower and toilet facilities. The Girls Welfare Building is arranged with a through corridor, with the wash and locker facilities on one side and the kitchen, dining room and recreation quarters on the other. In all cases a ceiling height of 11 feet has been maintained. All outside walls and roofs of the prefabricated structures are insulated. Main partitions around the office units are insulated to eliminate mill noises.

Previous experience had shown that it cost approximately \$75 per employee to provide modern wash, locker

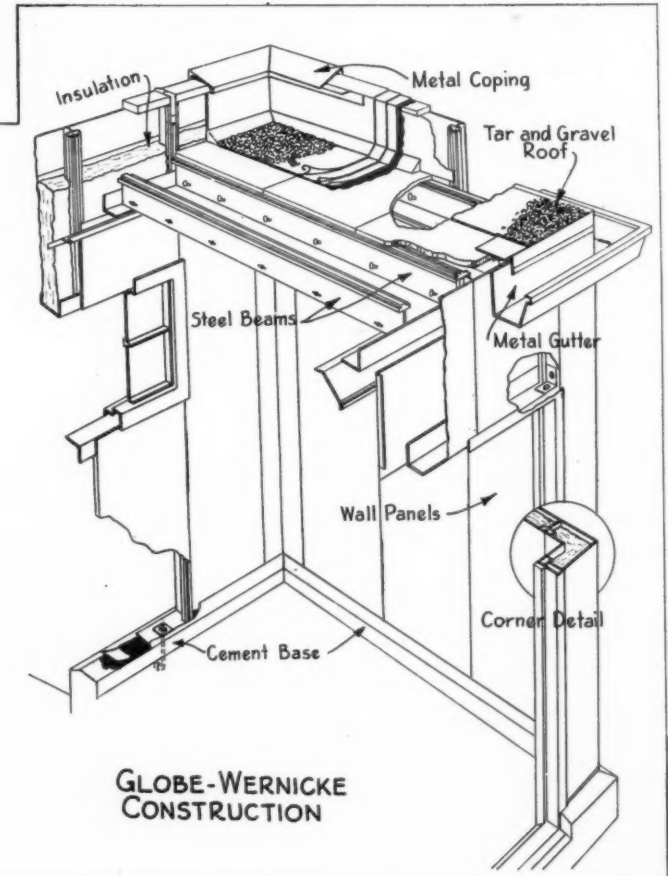
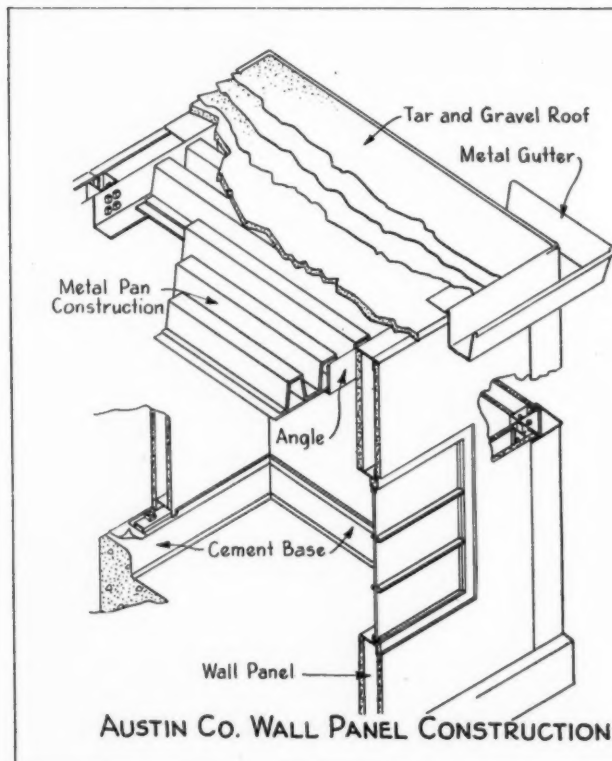
and toilet facilities. Prefabricated steel panel construction, however, installed in most cases after the main mill buildings were erected, provided better facilities at a cost of only \$63 per person.

Orderly, rapid erection featured all the prefabricated units, and in the single story structures two men, with an occasional helper in some cases, were able to handle the material easily and efficiently. The exterior walls, roof, partitions, pipe closets, etc., of all the buildings were constructed from prefabricated light gauge flat rolled sheets, formed into various shapes and sections to give structural strength and provide for connecting the panels.

Wall and roof sections were delivered nested and crated, cut to desired lengths. Wall sections were erected on poured concrete bases, the floor and 8 inch curb on which the walls were set being cast integrally with the foundation bolts in place, as shown in the drawings below. After the foundations had hardened, a felt mastic strip was laid and on it the metal sill pieces were fastened in place. Metal door and window frames were installed as units as the work progressed. All doors are of formed steel, either hollow metal or kalamein construction, carrying stainless steel kick plates. Windows are all rolled steel sections, commercial projected type.



LEFT: Exterior view of Girls Welfare Building at the Irwin Works of the Carnegie-Illinois Steel Corporation, Pittsburgh. This is one of a group of prefabricated panel-type structures made up of light gauge flat rolled steel sheets.

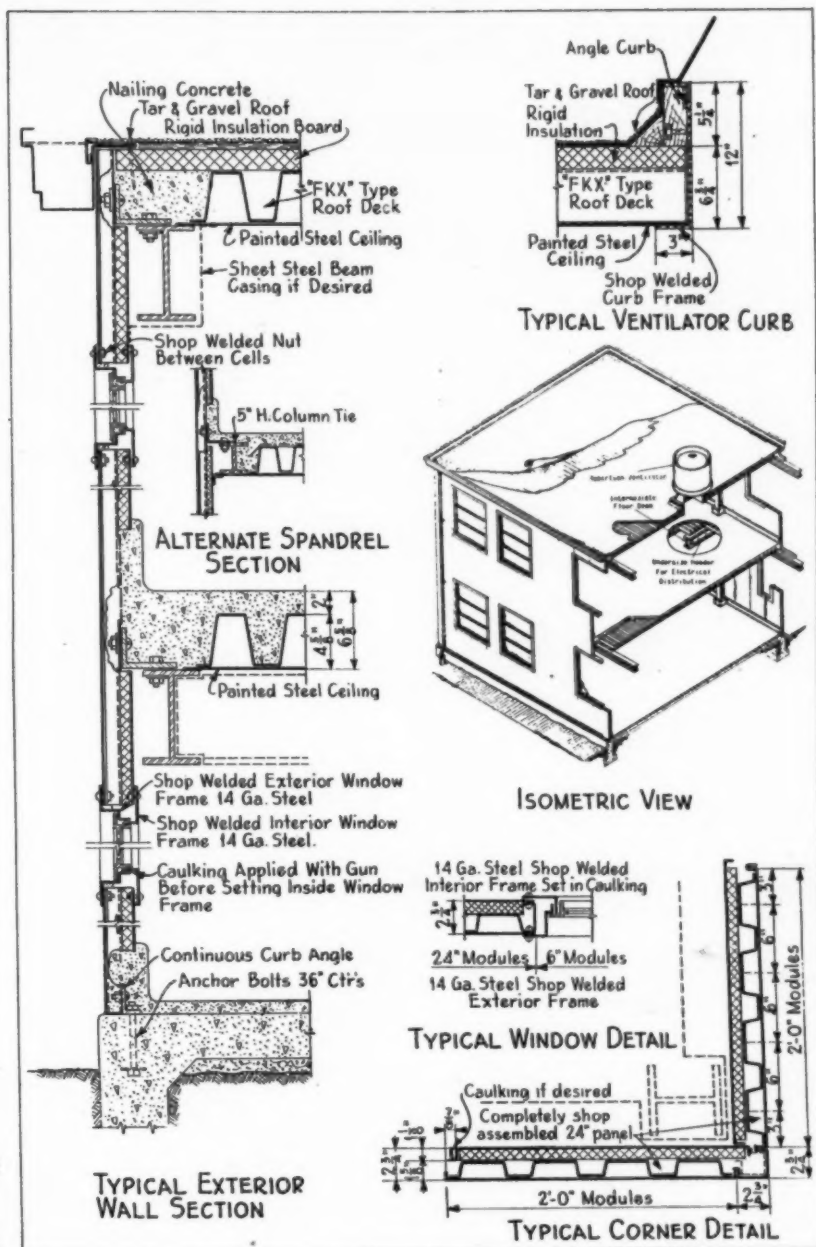


ABOVE: Details of construction of two types of building prefabricated as panels and erected at the Irwin Works. The one at the left is similar to the Austin Company's service station type of panel construction; the other is typical Globe-Wernicke construction.

Industrial structures of this type involve considerably more plumbing than do dwellings, and it was found that prefabricated metal structures were particularly adapted to quick and easy plumbing work. All piping connected with toilet facilities was installed in concealed 2'-6" pipe spaces having an access door for ease in maintenance and periodical valve adjustments. Fixtures were all of the wall hung type, which facilitates cleaning and assures sanitary conditions at all times. Foot pedals are provided for flushing. Wash fixtures are located in the main locker rooms, several different types being used, including stainless steel and porcelain enameled circular wash fountains as well as the wall hung trays. Operating offices are equipped with porcelain enameled pressed steel lavatories.

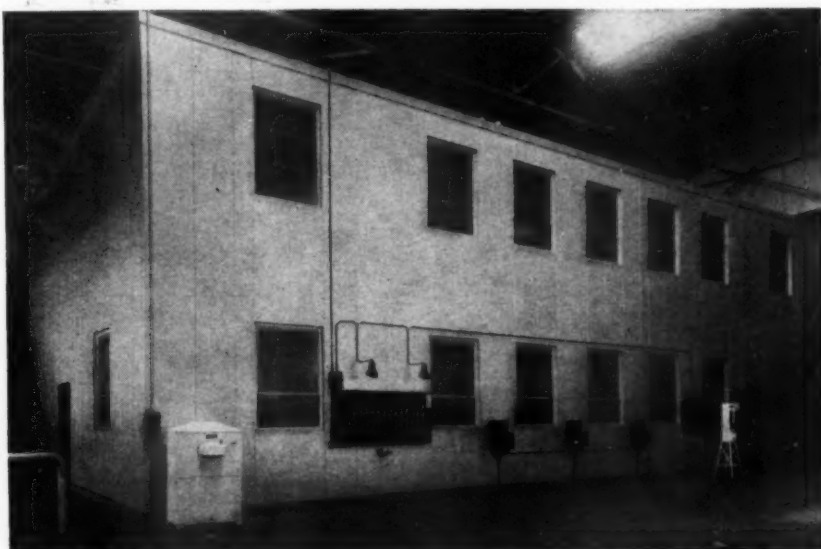
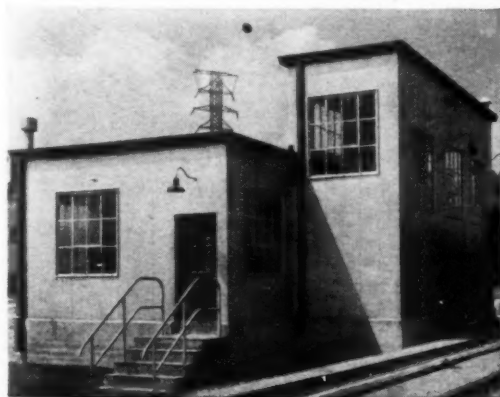
Shower rooms are faced with porcelain enamel sheets. In many instances the entire room is faced with these sheets, while in other cases the porcelain enamel is carried to a height of 8 feet, the facing extending out from the shower sections far enough to avoid splashing of painted surfaces. Experience indicates that best results are secured when the entire room is finished with porcelain enamel. Women's showers are all individual cabinets, porcelain enameled, with a dressing compartment on either side of each cabinet. The floors in all showers, wash rooms and toilets, as well as locker rooms adjoining shower facilities, are finished with a special germicidal floor surface, troweled on the concrete. The material used has a permanently inhibitive effect on the organism responsible for athlete's foot as well as other fungus growths.

Assembly in the various buildings varied according to their type and design. Tack and seam welding was used in some, self-tapping screws in others, and concealed bolts and clips in other instances. All metal sections were delivered finished with a shop coat of baked-on lacquer or leaded paint. In some cases, this is the only surface
(Continued to page 109)



ISOMETRIC view and typical details of one of the steel panel buildings at the Irwin Works, Carnegie-Illinois Steel Corp.; this is H. H. Robertson Co. system of cellular steel multi-story type of construction.

BELOW: At left is an exterior view of the Weigh and Traffic Office at the Irwin Works, and at right, a two-story combination utility building having offices on the first floor and wash and locker rooms above; both are of prefabricated steel.



Power Equipment CUTS COSTS of Small Stamford Houses



AS framing members are cut they are marked with house number and size.

POWER equipment, planning, and an unusually efficient job organization contributed greatly to the low cost and high value achieved in several developments of small homes now nearing completion at Stamford, Conn., by Joseph A. and John J. Campagna.

These young men, aged 29 and 26 respectively, graduates of Princeton University and sons of a prominent New York City apartment builder, have created somewhat of a stir in staid Stamford with their low-cost home building operations.

Their study of local housing conditions showed a very great need for houses that could be purchased and paid for at from \$25 to \$35 a month. They set out to build complete 4½ and 5½-room houses, priced from \$3,790 to \$4,170. So great was the local demand that they had 80 signed orders before they broke ground. In less than two months' time after the first announcements were made 124 houses were sold—a 100 per cent sellout of plots available.

With ample orders in their pockets the Campagnas were able to lay out their job in a highly efficient fashion, using power equipment and careful planning to reduce costs.

First step was the economical design and layout of the houses, as prepared by Louis Kurtz, architect of 15 West 44th Street, New York City. In addition to the usual plans and elevations, he prepared carefully detailed framing layouts and other detailed information of value in pre-cutting all lumber on a centrally located power saw.

The power saw—a fast, powerful machine capable of performing practically any type of cut—was set up under a shed adjacent to the field office. In addition to this table saw on which all framing was pre-cut, a number of electric hand saws were used at the houses.

Under the Campagna system, the entire force is organized into crews who perform specific jobs on what approaches a piece-work basis. For example, the sawing crew consists of one skilled sawyer and two helpers.



CREW consisting of saw operator and two young helpers easily cuts framing for one house a day. Pieces are numbered, stacked and delivered to site as needed by light truck.



A BUSY scene at Glen Park as dump trucks, tractor with earth mover and other equipment are put into operation to meet large demand for houses. At right, ready-mixed concrete is delivered for foundations.



This crew is paid a flat rate per house and easily cuts all the materials for one house in a day.

In the Glen Park development there are three standard floor plans, and when these first three were under way, the architect, foreman and saw operator got together and worked out a complete schedule of framing members and the cuts required. The saw operator then transferred the data to a small notebook which he referred to constantly.

Entries in the notebook were made as follows:

SILLS—2 x 6

Front—2/16'—1/13' 2"—1/12' 2", etc.

Back—2/16'—1/6' 8"—1/5' 8½", etc.

FLOOR JOISTS—2 x 8

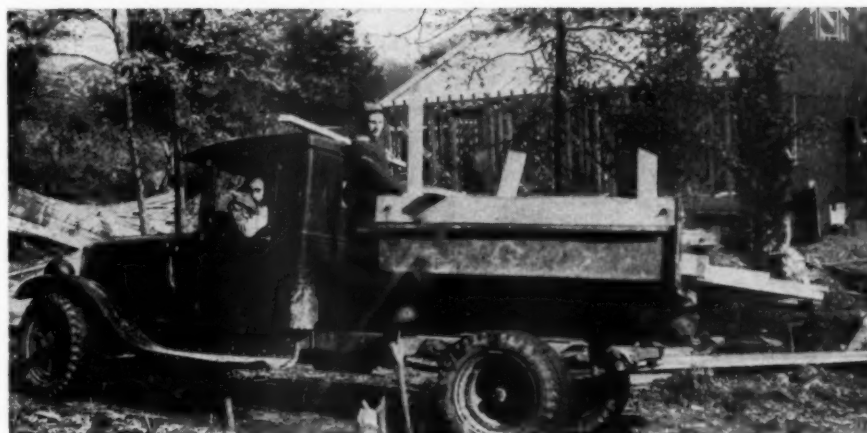
47/12'—6/9' 6"—3/14' 4¼", etc.

STUDS—2 x 4

200/7' 9"—20/8' 7", etc.

The first line is interpreted to read, "Front sills: two pieces 16 feet, one piece 13 foot 2, one piece 12 foot two." The upper figure indicates the number of units. Again to illustrate: under Studs, the first item reads "200 studs, 7 foot 9 in length."

As rapidly as the sawyer cuts the



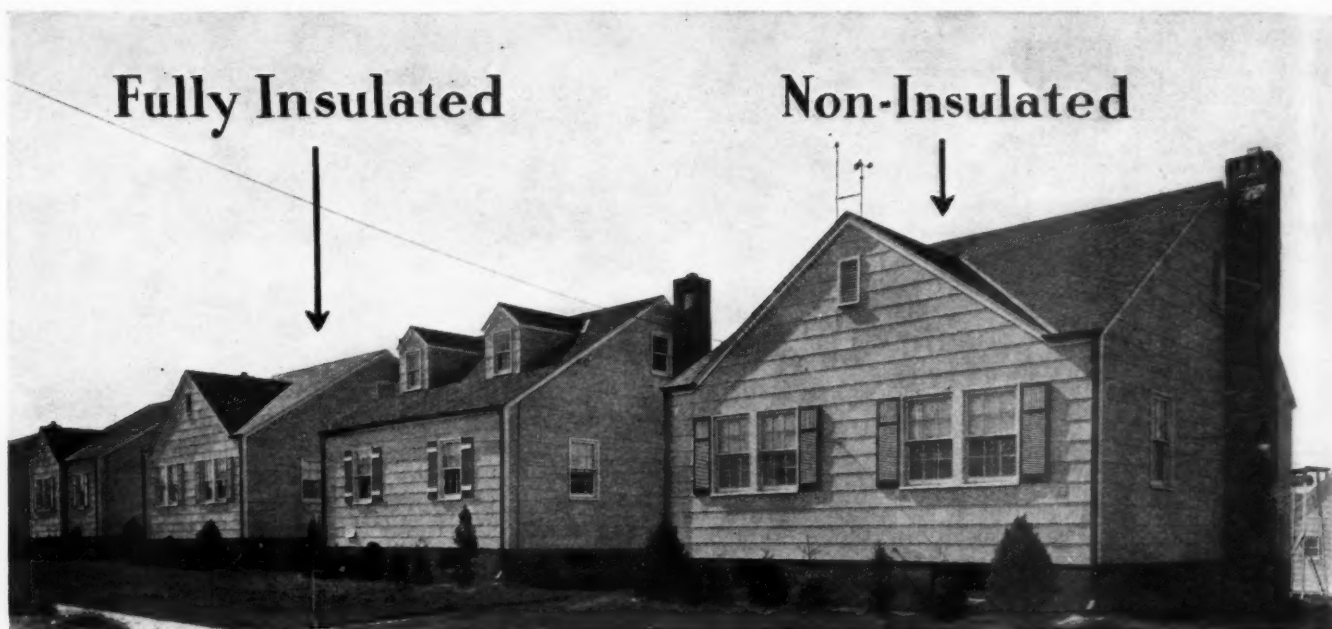
CAMPAGNA truck delivering pre-cut framing members to site.

members they are carefully stacked, with each piece identified by heavy chalk marks as to the house number, the kind of member and the length. Thus, 111-S means house No. 111, sill. Material for an entire house is piled together so that when the framing crew is ready to start work the pre-cut lumber is transferred by light truck to the house site and piled in carefully planned arrangements where it will be handiest for crew.

(Continued to page 96)



ELECTRIC pipe cutter set up on job.



TWO IDENTICAL Drosch houses in East Floral Park, Long Island, shown above, were used to demonstrate the practical value of insulation in cutting fuel costs.

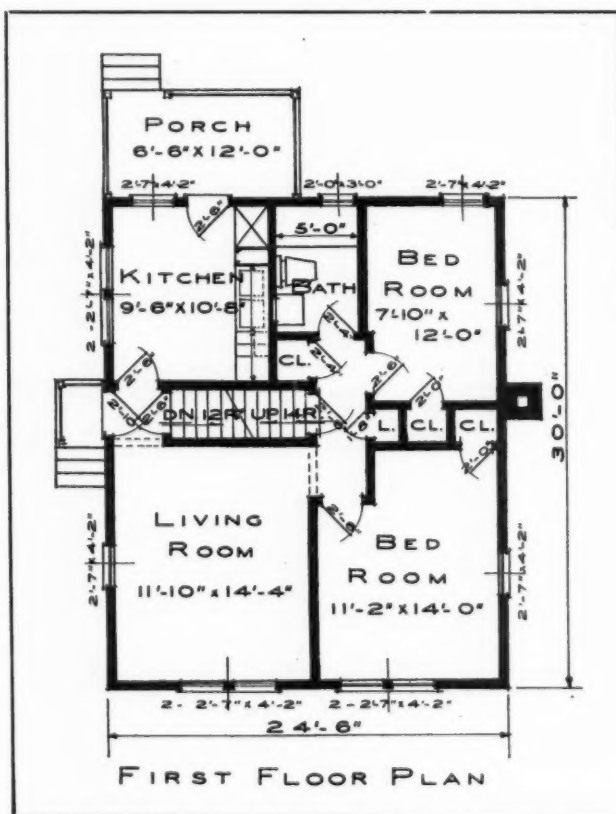
"Housewife Test" Shows the Sales Value of Insulation in Drosch Homes

LONG ISLAND builders have been responsible for many of the advances in home construction and equipment that give the buyer "More Quality House for the Money." One of these is Drosch & Sons, a firm which has been in business on the Island for 40 years and sold some 3,000 homes in various sections.

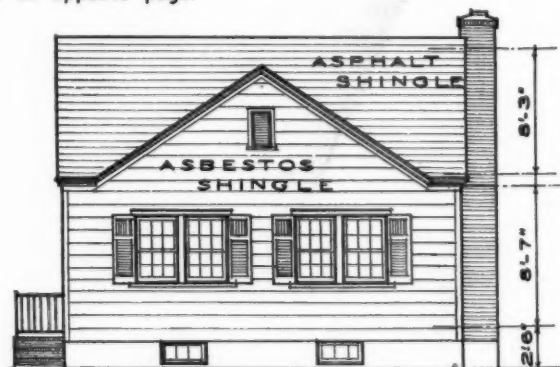
As this issue goes to press, a series of "housewife tests" are under way in two identical Drosch homes in their East Floral Park development to demonstrate the savings resulting from thorough insulation.

"The little fellow hasn't had the benefits of thorough insulation," Frank Drosch told *American Builder*. "Yet he is the one who needs it most. These tests will show how much the actual savings are and help us sell the small home buyer on the value of paying the extra cost. After all, it isn't much when amortized over 25 years."

During 1939 Drosch built and sold 165 houses in the East Floral Park development which were in a price



TYPICAL plan and front elevation of Drosch's East Floral Park homes which were used in housewife insulation tests. Exterior variations shown on opposite page.



FRONT ELEVATION

24½' x 30' Plan Popular. 165 Sold Last Year

range of from \$3,490 to \$6,500.

These are houses which definitely reach the mass market, with carrying charges around \$30 a month, including interest, amortization, taxes, water and insurance.

Frank Droesch has turned two of his recently built houses, identical in size and plan, over to the National Mineral Wool Association for the series of "housewife's tests" with insulation. Arrangements were made by Wharton Clay, secretary of the Association, to insulate fully side walls and top ceiling of one of the East Floral Park houses with 3½" of mineral wool, and to install accurate testing apparatus in both this house and the uninsulated house located two doors down the street.

The uninsulated house is being occupied by one of Droesch's star saleswomen, Mrs. Harriet Wilson. The insulated house is occupied by her daughter, son-in-law and their two children. Each family is instructed to establish as nearly as possible the same heat requirements. They both set their thermometer thermostats at 70 degrees. They both keep windows shut during the daytime. Both shut bedroom doors at night.

By the end of the month of March and before the end of the heating season, the final figures were not yet available. On the basis of 3 full months—and cold ones—December, January and February, however, the record shows that 21.6 per cent less oil was burned in the insulated house than in the uninsulated one. In these 3 severe winter months the uninsulated house required 1,180 gallons of oil, while the insulated house required only 925 gallons. This 3 months' savings of 255 gallons of oil is an important item of upkeep cost. At 7 cents a gallon it means an average monthly saving of \$5.95. At this rate the cost of complete 3½" inch wall and attic ceiling insulation will be soon written off.

The estimated cost of the installation amounts to less than 90c a month on the 25 year FHA mortgage plan.

(Continued to page 107)

THREE variations of Droesch's low-cost East Floral Park houses are shown. These are in the \$3,500 to \$6,000 price class and are located on plots 40, 50 and 60 x 100 ft. Droesch & Sons have constructed and sold more than 3,000 homes on Long Island over a period of 40 years. The father and 4 sons are all active in real estate and building activities.



"One Hundred Year Home" Tested

**Steel Frame—Metal Lath—Concrete Stucco
Combine for Low Cost and Permanency**

By Erwin M. Lurie, C. E.

WITH more than sixty systems evolved during recent years for the construction of steel and concrete stucco residences, thrifty home owners may wonder why appreciable progress hasn't been made in the production of popular priced fireproof houses of greater durability. However, any experienced builder can offer an even more impressive array of reasons for the public's slow acceptance of these newer methods of erecting homes—and most of these explanations are quite convincing.

Some inventors of new systems of building seem to have envisioned huge and immediate profits from their patents, spoiling prospects with heavy royalty exactions. Others of more practical business acumen have used their inventions in stock promotion schemes, actual building apparently being a secondary consideration. The patent-right exploitations of some so-called improved building systems are reminiscent of the selling of "county rights" on patent churns in earlier days.

Building mechanics have not been entirely blameless in the sinking of ambitiously launched better homes

schemes. In some instances, the very first projects have been loaded down with excessive labor costs, when special effort should have been made to demonstrate the feasibility of the new system because of the stimulus it promised to home building. Jurisdictional disputes likewise have been retardants.

Many new systems of construction have serious merchandising weaknesses. They require specially processed materials, odd shapes, or specially prefabricated units—things that building materials dealers cannot afford to stock in advance of steady demand. Special construction equipment and extra tools are required by others. Then, too, in some systems the building procedure is unconventional. Loss of time resulting from requiring workmen to do things in strange ways is almost certain to offset any special advantages offered by a new system of construction.

Perhaps the most serious deterrent to the adoption of new systems of construction is the chariness of home owners, as if swayed by the admonition of the couplet—

"Be not the first
By whom the new is tried
Nor yet the last
To lay the old aside."

For his lack of venturesomeness the average home owner cannot be blamed. With him, building a house is a major endeavor, probably to be undertaken but once. In it he usually extends his financial resources sometimes dangerously. Even though some new system promises greater durability, fire safety and lower upkeep, the average home builder feels that he cannot afford to experiment, because failure might be ruinous. Accordingly he is prone to stay with conventional methods and familiar materials.

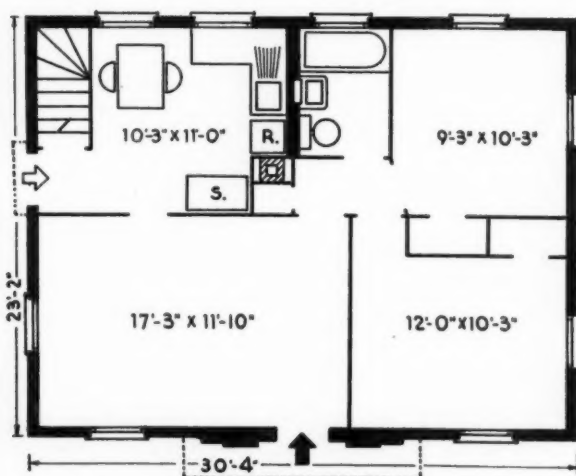
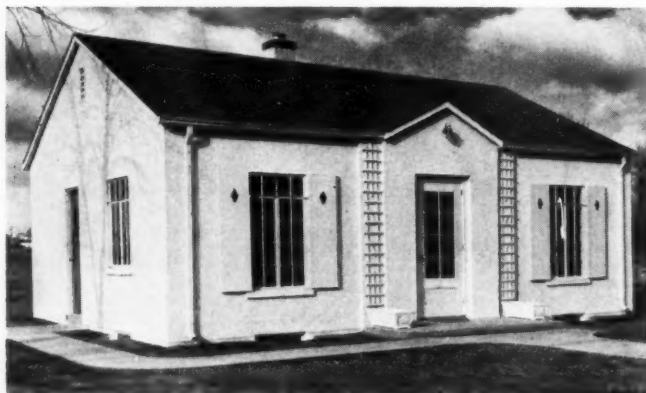

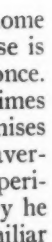


PHOTO and floor plan of the E. R. Haack metal lath and concrete stucco house at Sheboygan, Wis.; designed by the author.



CORNER of living room shows modern, trim appearance with small size steel base and cove mouldings around steel casements.



a small

(Continued to page 102)

Portfolio of Architectural Plates of DOUGLAS FIR PLYWOOD PANELING

PREPARED BY CARL F. GOULD, F.A.I.A.

Another of a series, intended as suggestions to the builder and architect as possible ways of using Douglas Fir Plywood for walls and shelves in a residential library design.

A SIMPLE and inexpensive Colonial treatment for a residence library is exemplified here. The design indicates a pleasing variation in the sizes of Douglas fir plywood panels, framed by moulded stiles and rails. The trim, cornice and panel mouldings are all selected from Standard Wood Mouldings, 7000 Series.

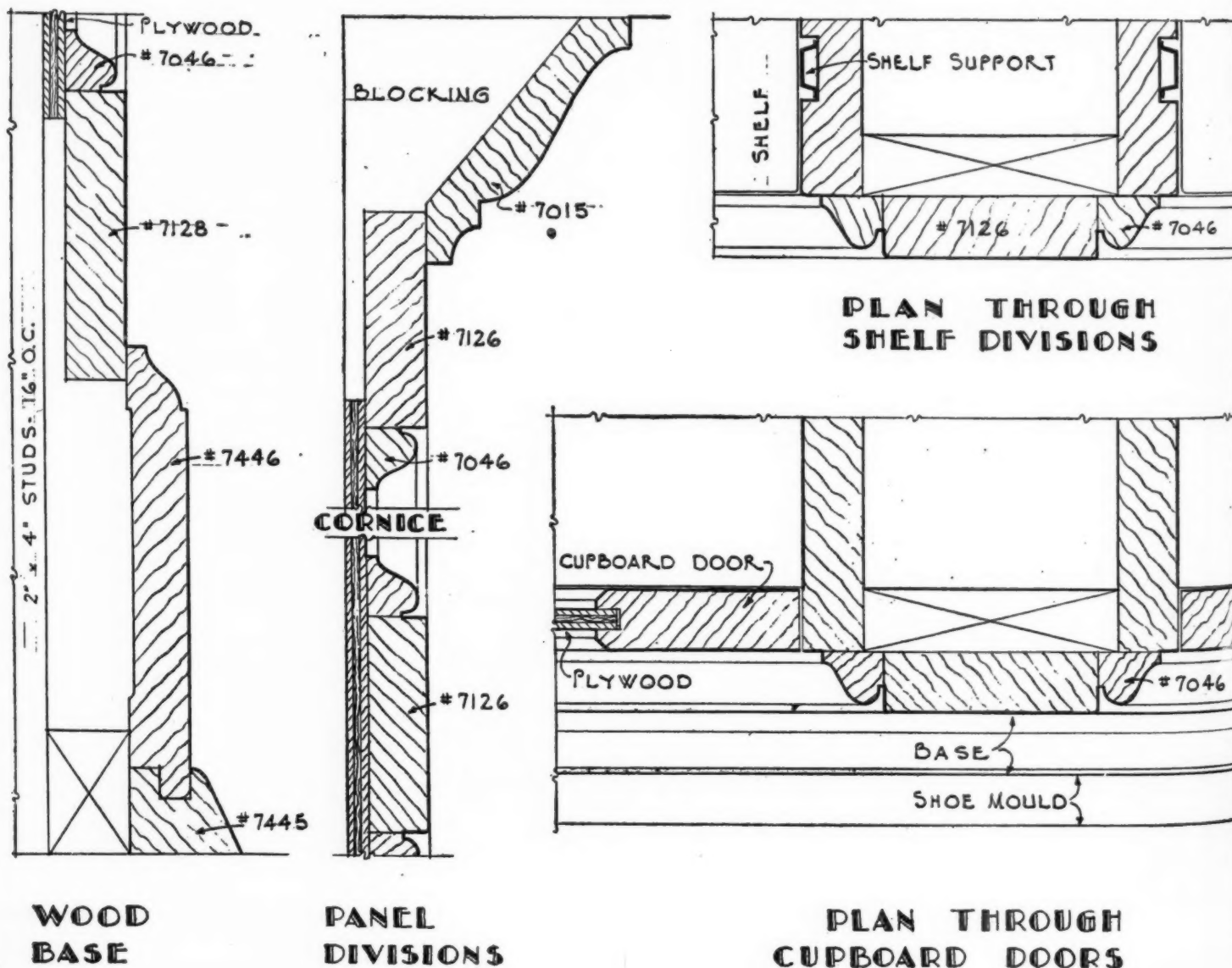
This type of room would appear to advantage with either painted or stained finish.

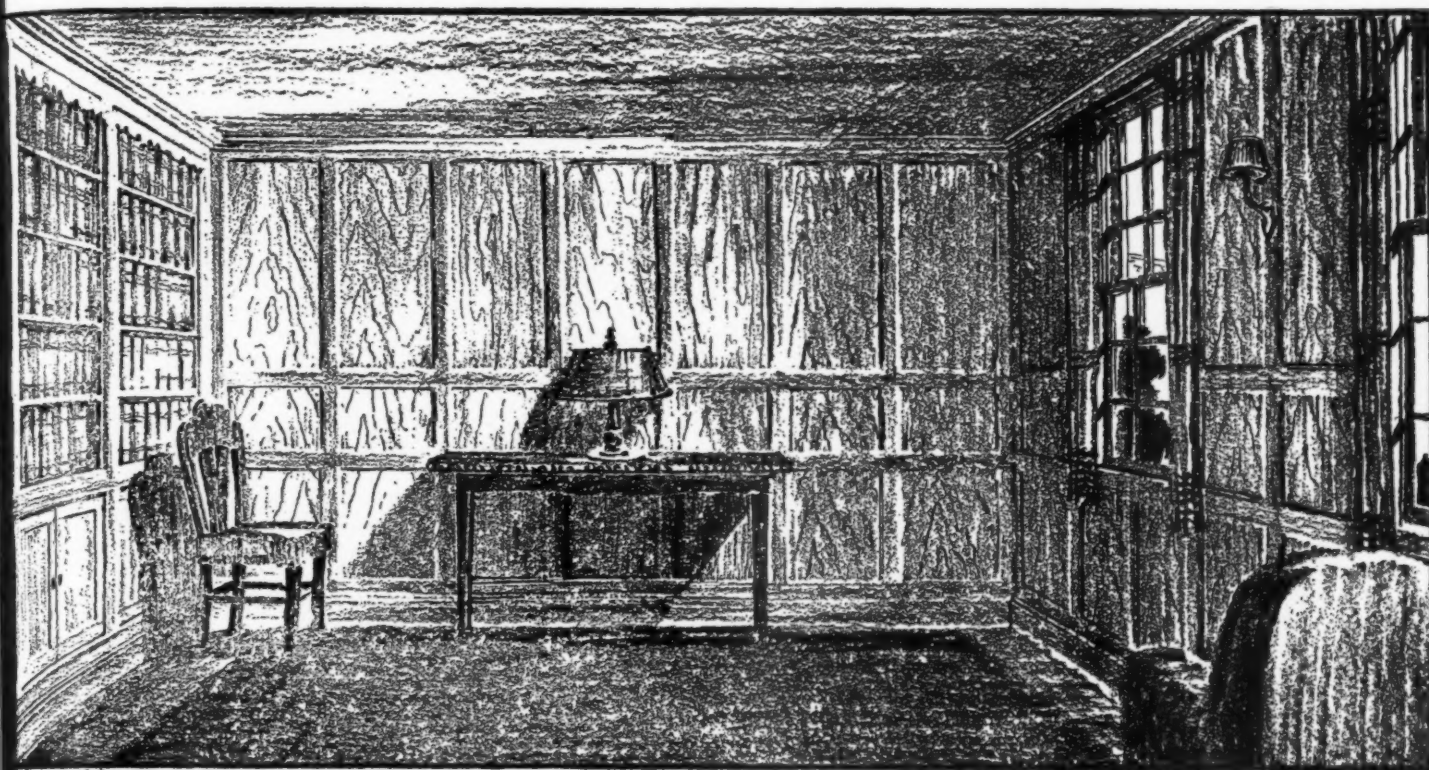
MATERIALS: The shelves of the bookcases, as well as the bandsawed treatment above them, are executed in five-ply, $\frac{5}{8}$ " plywood in a sound 2-sides grade.

The paneling is of good 1-side grade, $\frac{1}{4}$ " Douglas fir plywood, although a wallboard grade may also be used. Nails are 4d finishing or casing.

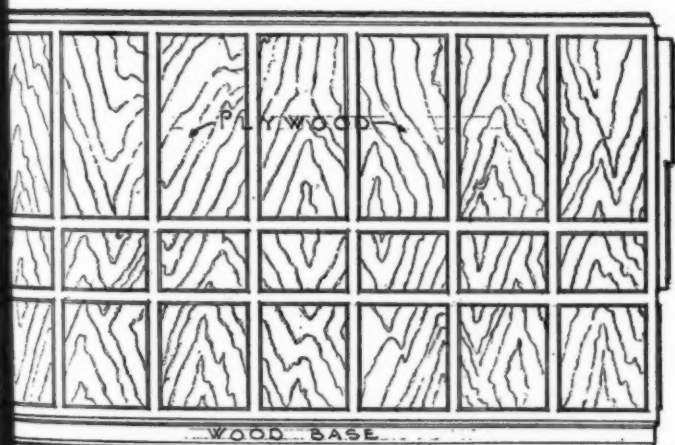
The plywood panels are in full size sheets, with mouldings applied over them and concealing the joints.

DETAILS SCALE 1/2 FULL SIZE



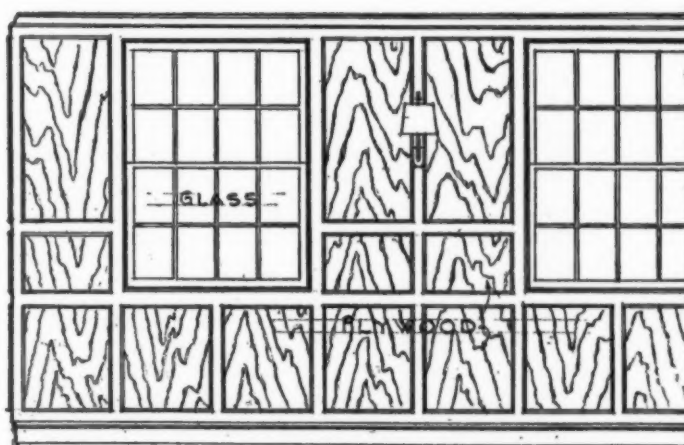


RESIDENCE LIBRARY



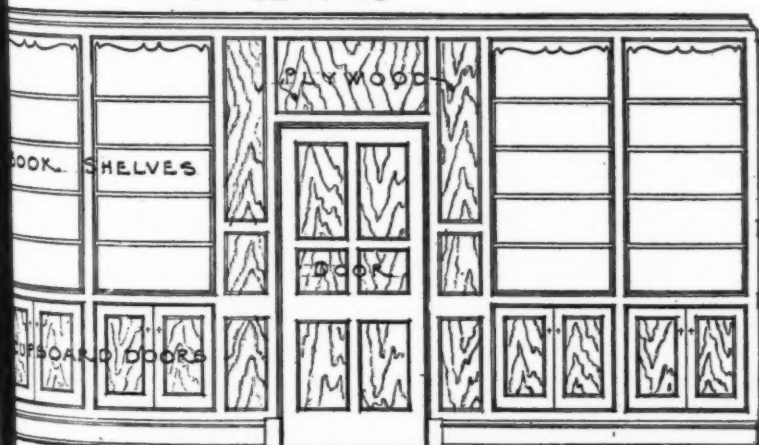
END ELEVATION

SCALE 1/4" = 1'-0"



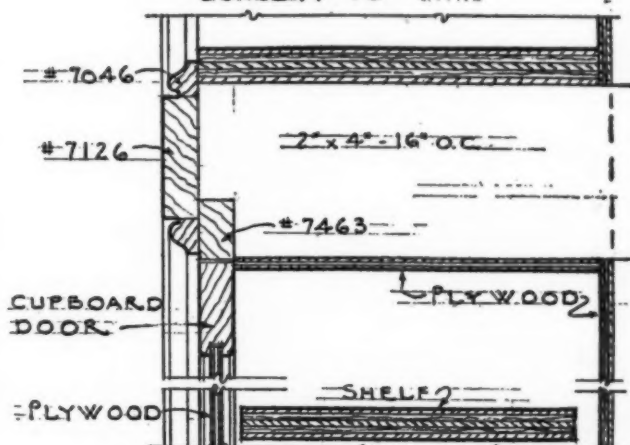
SIDE ELEVATION

SCALE 1/4" = 1'-0"



SIDE ELEVATION

SCALE 1/4" = 1'-0"



SECT. THROUGH SHELF

SCALE 3/4" = 1'-0"

Using THE STEEL SQUARE To Lay Out Common Rafter

Continuing Last Month's Article, Laying Out Common Rafter with the Help of the Steel Square Is Discussed Further

By Gilbert Townsend

IN THE April article of this series on the steel square it was explained that the "length per foot of run" of common or "main" rafters in the frame of a pitch or gable roof can be read off directly from the rafter tables on the face of the blade or body of the square, and that if this "length-per-foot-run" is multiplied by the number of feet in the run of the rafter, the result obtained will be the *length* of the rafter taken along the measuring line from the outside upper corner of the wall plate to the point in which the measuring line intersects the center line of the ridge. Thus, by the use of the rafter tables and one simple multiplication, the "length" of the rafter is found.

Length-Per-Foot-Run for Steep Slopes

The figures given in the rafter tables can be referred to and used when the "rise-per-foot-run" of the rafters is either two inches or eighteen inches or any number of inches in between these two limits, but there are cases where the slope of the rafters is very steep, as, for instance, in the case of the "gambrel" type roof shown in the preceding article. Here the slope was 24 in 12 or 24 inches rise per foot of run, which is not uncommon in this type of roof. For a rafter like this where the "rise-per-foot-of-run" is more than 18 inches, the rafter tables are of no help, and the length-per-foot-run must be found by some other means. The steel square, however, can still be employed to solve the problem. In Fig. 1, let the square be laid down on a large sheet of brown paper and let the *run* of one foot or 12 inches be marked

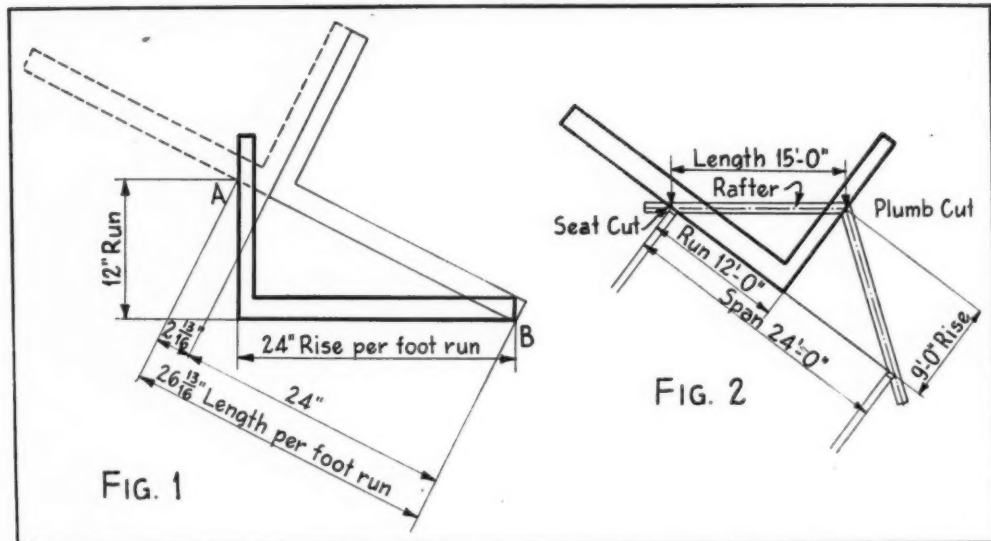
off along the outside edge of the tongue at point A, while the *rise* of 24 inches is marked off along the body or blade of the square at point B. Now, lift the square and with a straight edge, such as the dressed edge of a board, draw a line through the points A and B as shown. Then, the measured distance from A to B will be the length-per-foot-run for the rafter and this distance can be measured off with the square itself by placing it in the two positions shown by the light, full lines and the dotted lines in Fig. 1. The distance is found to be 24 inches plus $2\frac{13}{16}$ inches, making a total of $26\frac{13}{16}$ inches or $2'-2\frac{13}{16}"$ and this is the length-per-foot-run of the rafter in the case where the rise-per-foot-run is 24 inches. Multiplying $26\frac{13}{16}$ inches by the number of feet in the *run* of the rafter will give the length of the rafter. The figures given in the rafter tables for the length-per-foot-run corresponding to various rises-per-foot-run can be checked and verified by this method, and the method can be used for finding the length-per-foot-run of rafters when the rise-per-foot-run is known, but there are no rafter tables on the particular square which is at hand. The rafter tables are to be found only on the more expensive squares.

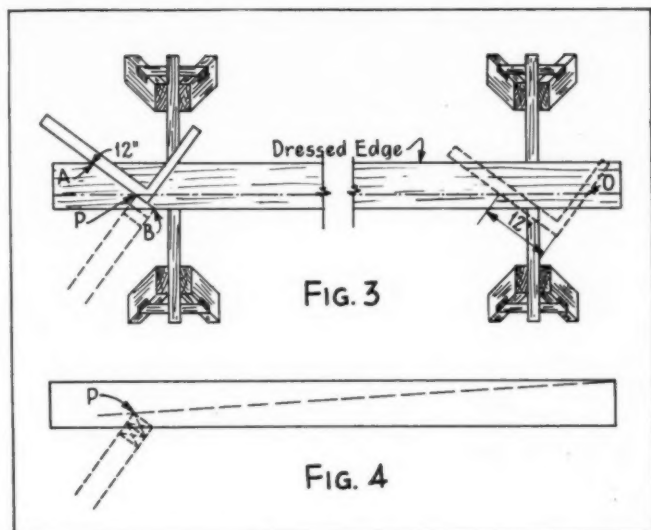
The length of a common rafter can be found by means of the steel square without reference to the rafter tables and without bothering with arithmetic and the proper cuts at the ridge and at the wall plate can be marked out at the same time by using the following method:

Laying Out Common Rafter

Select a plank of the right width and thickness, such as, for example, a two by eight, of such a length as to be plenty long enough for the rafter required. A question at once arises, "how do you tell how long a plank has to be in order to be sure that it is long enough?" Fig. 2 shows how this question may be answered. In Fig. 2 is shown a section through the frame work for a roof of $\frac{3}{8}$ pitch somewhat like the section through a roof frame shown in the last preceding article of this series, but reduced very much in size; that is to say, it is drawn out to a small scale, and, moreover, it is twisted around on the paper so that one of the rafters is parallel to the

top and bottom edges of the page, or, in other words, appears in a horizontal position. Fig. 2 shows also a drawing of a steel square enlarged in size with relation to the drawing of the roof frame in such a way that every inch on the edge of the square corresponds to a foot in the "run" of the roof or the "span" of the roof and consequently in the *length* of the rafter. This sketch shows that if a number of inches corresponding to the *run* of a roof in feet be marked off on the outside edge of the *blade* or *body* of square, and if a number of inches correspond-





ing to the "rise" of the roof in feet be marked off along the outside edge of the *tongue* of the square, the length of a straight line between these two points in inches which may be measured off with a rule or the edge of another square, corresponds to the "length" of the common rafter in feet. In this way a very accurate idea as to the length of plank required for the rafter can be obtained.

Having selected the plank from which to lay out and cut the rafter, the next step is to dress one edge (which will be the top edge or the "back" of the rafter) straight and true and to lay the plank down flat on the top of a couple of horses as illustrated in Fig. 3, so that the square can be conveniently laid down on the side of the plank as shown and moved about as required. When this has been done, the square should be placed near one end of the plank (say the left hand end) with the inch mark of the outside edge of the blade corresponding to the *run* of the roof and the inch mark of the outside edge of the tongue corresponding to the *rise* of the roof, both in line with the dressed edge of the plank. Then a line such as the line A-B can be drawn or scratched on the side of the plank representing the "level of the top of the wall plates." By measuring along this line from point B to point P a distance equal to the thickness of the outside wall studding—say 4 inches—the point P can be located. Point P is the outside top corner of the wall plate as shown by the dotted outline of the wall framing and should be far enough from the extreme left end of the plank to allow for the "tail" of the rafter. After the point P has been fixed the "Measuring Line" P-O can be scratched on the side of the plank with a scratch-awl parallel to the dressed edge. Now we are ready to proceed with the laying out of the rafter, but before explaining this further a word or two about the Measuring Line

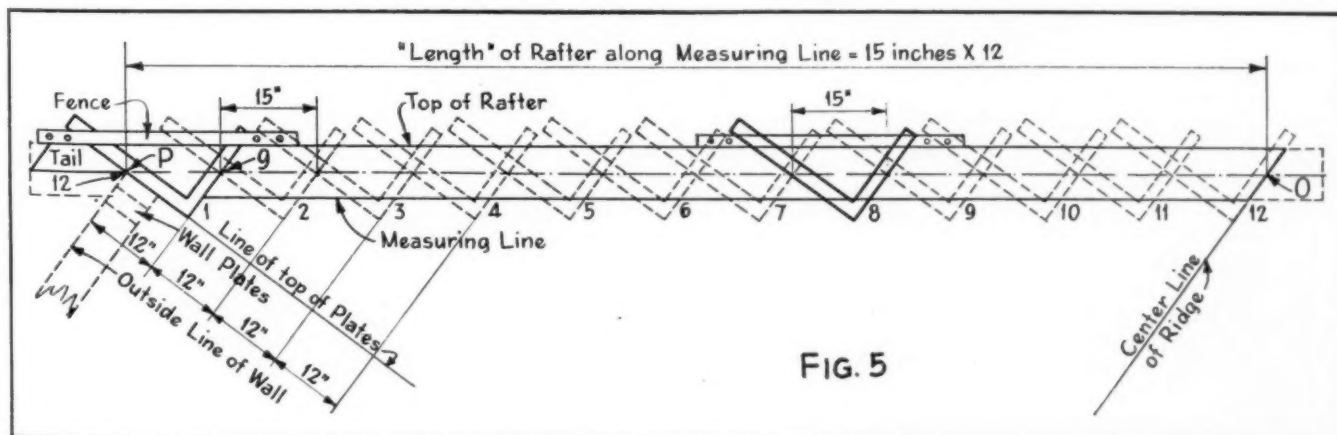
may be helpful to some who, without it, might make a mistake. The measuring line *must* be parallel to the top edge or "back" of the rafter—the dressed edge of the plank—as shown in Fig. 3. In no case should the line be drawn as shown in Fig. 4.

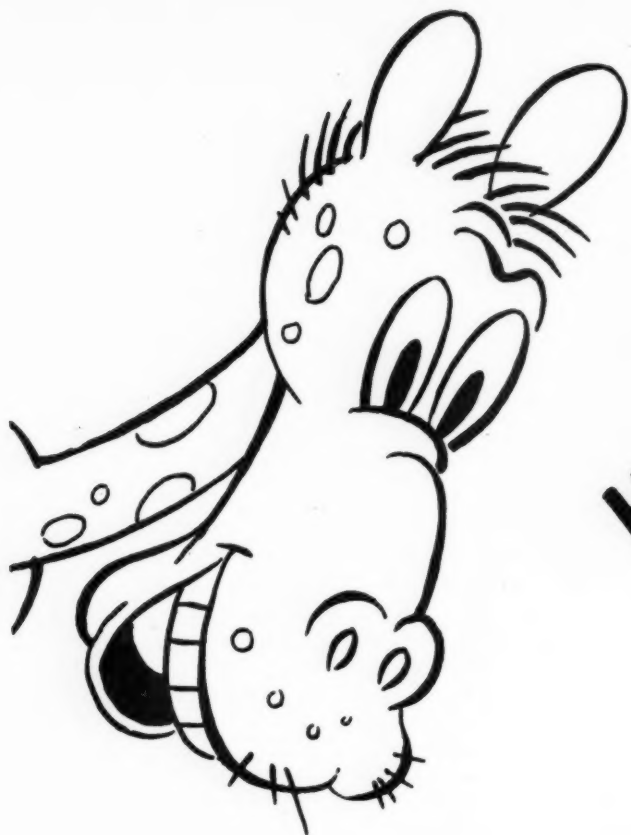
Finding Rafter Length with Steel Square and Fence

To make the adjustment of the square on the plank easier, it is suggested that a hardwood "fence" be made and fitted to the square as was described in the first article of this series and as is shown in Fig. 5. When the point P and the measuring line have been established as shown in Fig. 3, lay the square on the stock as indicated by the full lines at the extreme left of Fig. 5 with the 12-inch mark on the outside edge of the body placed exactly at the point P, and the nine-inch mark (the rise-per-foot-of-run) on the outside edge of the tongue placed on the Measuring Line. With the square in this position, a line drawn along the outside edge of the body or blade will represent the level of the top of the wall plate which is drawn out in sectional view at the extreme left hand end of Fig. 5. Keeping the square in the position described above and as shown by the full lines at the left hand end of Fig. 5, adjust the fence so that its edge lies snugly against the dressed edge of the stuff (the top edge or "back" of the rafter) and lock it in place by tightening the screws. Be sure that the 12-inch mark on the body of the square and the nine-inch mark on the tongue are still exactly on the measuring line while the fence fits firmly against the dressed top edge of the rafter.

Take plenty of time at this stage to be sure that everything is exactly right because the accuracy of all the future work depends upon this first step being very carefully made. When you are sure you are right and with the fence held firmly in place, and the 12-inch mark on the body of the square still held at point P, take a pencil or a scratch-awl and mark clearly the point where the outside edge of the tongue of the square crosses the measuring line—the point marked 9 at the left hand end of Fig. 5. Now, with the fence always held tight against the top edge of the rafter, move the square along to the right until the 12-inch mark on the outside edge of the blade is just at the above mentioned point 9 and the nine-inch mark on the outside edge of the tongue is also exactly on the measuring line, but further along towards the right than it was before and the square is in the position marked 2 in Fig. 5. You will have moved the square a distance of 15 inches along the measuring line because this is the exact distance in a straight line diagonally across from the nine-inch mark on the outside edge of the tongue of the steel square to the 12-inch mark on the outside edge of the blade or body.

The dotted outlines of the square shown in Fig. 5 and
(Continued to page 97)





U HORSE SENSE!

by Clifford W. Stuart

THE home building field today provides a great opportunity for SERVICE to those who buy homes and REWARDS to those who build or sell homes.

Why does a family buy a home, anyway?

Because they WANT it.

And WHY do they want it?—for “shelter”?

Yes, in a way, but how many families who buy homes don't already have “shelter”? Isn't it true that charm, comfort, convenience, freedom, joy, health, relaxation, honest pride, are the *important* factors?

In other words, that intangible called “DESIRE” is the *mainspring of action*.

Foundation, framework and other structural elements are important essentials, of course. But when it comes to effect on that mysterious “desire,” are there ANY items more important than:

LOCATION
DESIGN
FLOOR PLAN
ATTRACTIVE KITCHEN
ATTRACTIVE BATHROOM
AUTOMATIC HEATING
ADEQUATE WIRING
CONVENIENT LAUNDRY
PLENTY OF STORAGE SPACE

Not only are these “desire” items but, many of them are *essentials* too!

Every house, in most parts of the country, must be *heated*.

Every house must be *wired*.

Every house must be *lighted*.

Every family's food must be *cooked*.

Every family's food must be *preserved*.

Every family's dishes must be *washed*.

Every family's garbage must be *disposed of*.

Every family's dishes and groceries must be *stored*.

Every family's clothes must be *laundered*.

In other words, every house, to be lived in, needs a heating plant, wiring, range, refrigerator, dishwasher, garbage disposal, kitchen cabinets, laundry.

So why not put this equipment in new houses *when they're built*?

Installation at the time of construction will give—the home owner a better “buy”—because many items can be better and less expensively installed when a house is built than later, and longer-term, simplified, cheaper financing may apply.

The builder has the advantages and rewards of “packaging”—more “desires” to buy, more profits from the inclusion of equipment that people will buy from someone anyway.

From the financial angle, cost of home ownership is made up of two elements:

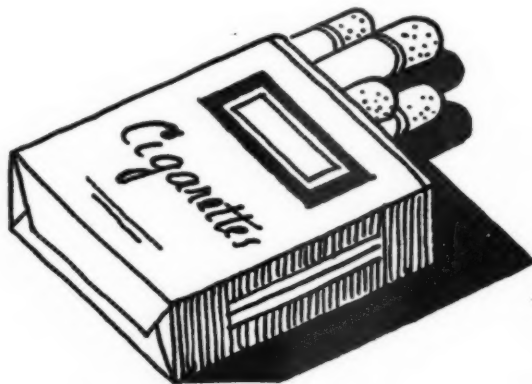
1. Cost to *buy* (capital investment).

2. Cost to *operate or live in* (operating expense).

Sometimes only the first is considered, and this frequently leads to disappointment, dissatisfaction and real financial loss to the home buyer (as for instance, when an inefficient heating plant and no insulation run up the heating bill).

The equipment items previously mentioned (heating, wiring, kitchens, laundry, etc.) are combination *investment and operating items*. In the best immediate interest of the house purchaser, and in the best ultimate interest of the builder (reputation, confidence, satisfied customers), these should be selected on the basis of **LOW TOTAL COST OVER THE YEARS**.

(Continued to page 120)



DESIRE for home ownership created at less than the cost of a package of cigarettes a day.

SHOPCRAFTER'S Corner

Things To Build for Profit or Pleasure

Double Deck Bunk for Summer Cottage or Small Room

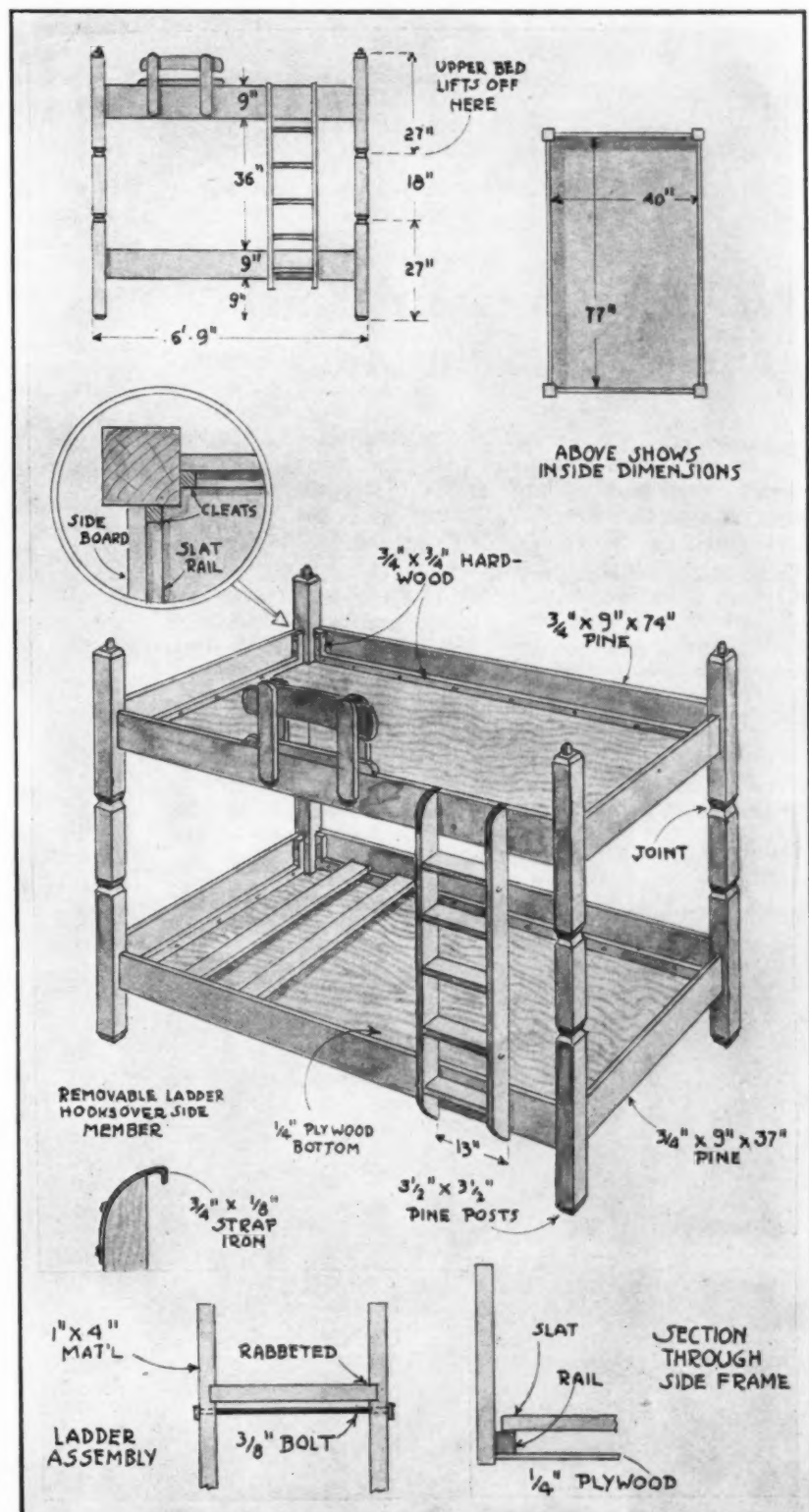
AS a space saver the double decker has always been a solution to the problem of providing extra sleeping accommodations in small rooms. Now with the summer vacation season almost at hand, this popular item of furniture will be in even greater demand for use in summer cottages and guest houses.

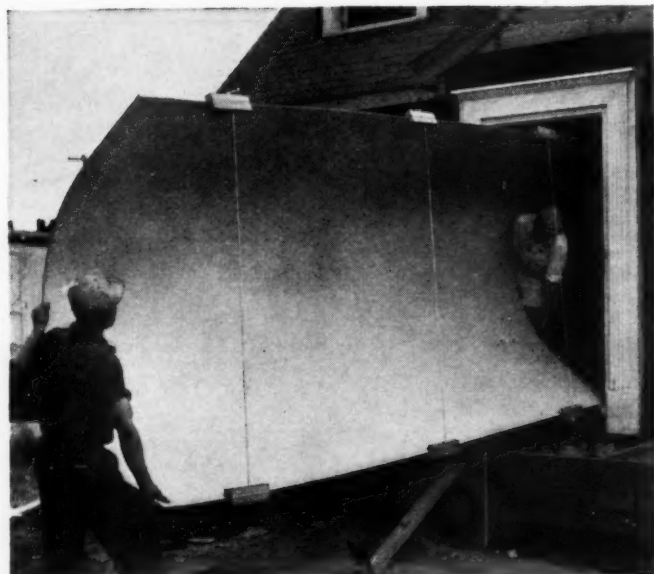
The two-story bunk, as detailed this month, is free standing, four legs being used. However, it can readily be built against a wall or in a corner to eliminate two or three legs, respectively.

Here is a design that involves the simplest kind of carpentry, and can be made of Western pine or similar material. In short, it consists of two box beds, one of which can be set upon the top of the other, having a dowelled joint where indicated. Side members and head and foot boards are secured to the posts by means of hardwood cleats screwed to each. If occasion should ever arise to take the beds apart for transportation or storage, a screw driver does the trick. Of course, no glue should be used in this case. For neatness and to prevent dust sifting down through the springs or mattress, a panel of quarter-inch plywood is screwed to the bottom of the slat rails.

A sliding guard is made as illustrated, and the ladder simply hangs over the edge of the side board of the top bed by means of strap-iron hooks. These, however, should have felt cemented to the under side to prevent marring the wood.

TO BUILD the double decker as detailed at the right, there will be needed 4 pcs., $3\frac{1}{2}$ " x $3\frac{1}{2}$ " x 45" pine for lower posts; 4 pcs., $3\frac{1}{2}$ " x $3\frac{1}{2}$ " x 27" for upper posts; 4 pcs., $\frac{3}{4}$ " x 9" x 74" pine for side rails; 4 pcs., $\frac{3}{4}$ " x 9" x 37" pine for end rails; 6 pcs., $\frac{3}{4}$ " x $\frac{3}{4}$ " x 74" birch for slat rails; 1 pc., $\frac{3}{4}$ " x $\frac{3}{4}$ " x 120" birch for cleats; 2 pcs., 1" x 4" x 56" pine for ladder rails; 5 pcs., 1" x 4" x 13" pine for ladder steps; 2 pcs., $\frac{1}{4}$ " x 40" x 77" plywood for bottoms; short lengths of 1" x 4" pine for sliding guard; enough scrap or crating lumber for slats and needed screws, bolts, hooks, nails, etc.





UPSON "Strong-Bilt" wall-high panel bends to go through doorway.

Wall Size Interior Finish Panels Speed Building

GIANT panels which can cover the entire wall of an average room as large as 8 x 14 feet are now available as Upson Strong-Bilt Panels made by The Upson Company, Lockport, N.Y. Since side wall paneling, with the cutting and fitting of molds, for small homes may be expensive, advantages of these larger sizes are obvious. But at first blush, to get such a panel through the door of a new house is like passing a camel through the needle's eye.

The pictures here show a quick and easy method of handling these large panels which possess sufficient strength and flexibility to bend, with the aid of a specially devised U-clamp, so that two men can easily carry a panel through an ordinary 2'6" x 6'8" doorway. Of course, the panels for the second floor should be distributed to their ultimate location before closing the stairwell.

An ingenious device called the Upson Floating Fastener

which is used in applying these large panels completely eliminates face nailing. The fastener securely anchors the panel from the back and permits the panel to adjust itself up or down or from side to side with ordinary movement of the framework.

These panels, which are $\frac{3}{8}$ " thick, are ideally adapted for the dry-built construction of small homes. Test jobs have shown that the walls and ceilings of an ordinary five-room house can be finished completely in but three or four days with these new wall-size panels, thus approaching the speed of prefabrication. Floors and trim can be applied by the same carpenter immediately the walls and ceilings are installed.

There is another advantage reported for the Strong-Bilt panels in that their strength and rigidity give structural strength to the building. They insure walls and ceilings forever free from cracks. They are applied direct to the studs and joists without backing. Care, however, should be exercised to see that studs and joists are level and in line. The insulating efficiency compares favorably with that of specialized insulation materials.

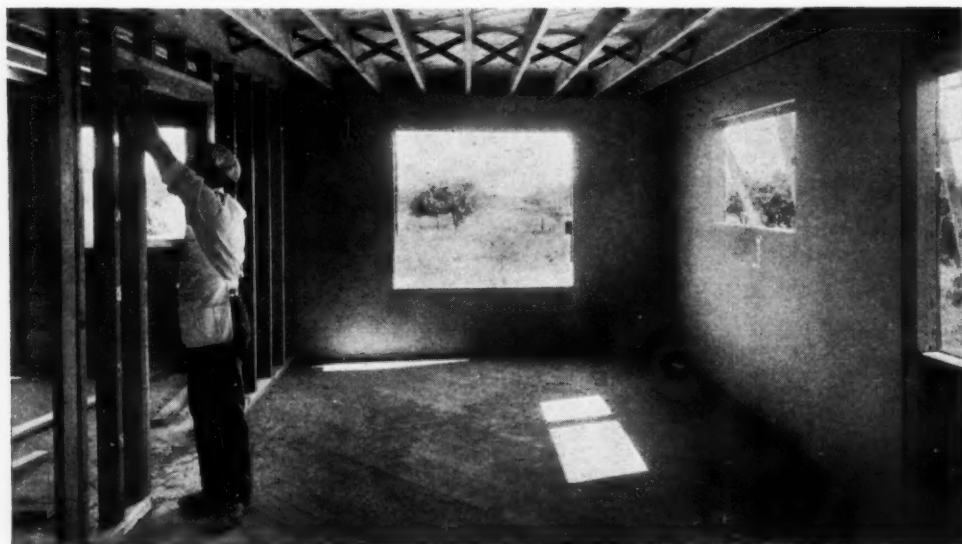
The smooth, non-absorbent surface permits the contractor or home owner to decorate in any color desired, at a minimum cost. Because of the closed, fuzzless surface, one coat of paint, without a priming coat, will finish the ordinary room. More than two coats are seldom, if ever, required.

Another innovation is a specially made moulding with a recessed edge next to the panel surface. This recessed edge does away with the broken paint line common to ordinary panel installations. The design of the moulding permits the brush to slip under the moulding so that any movement of the panel is concealed. Thus, in rooms where the new giant-sized panel is used together with the floating fastener and the Shad-O-Line moulds, the contractor or home builder can obtain an unbroken wall without fear of buckling or cracking—without even a nail head to mar the surface.

RIGHT: One giant 8' x 14' wall-size panel can cover an entire wall of the average room.



LEFT: Workman applying Upson Floating Fasteners to the studs; these anchor the panel from the back.



New Building Products for Homes; Builders' Equipment to Deliver Better Jobs

Complete Package Window

DETROIT Steel Products Co., Detroit, Mich., maker of Fenestra steel casements, has announced the development of a Package Window unit for the mass market; it is reported to be the first completely prefabricated steel window unit delivered to the building job completely equipped with glass, cased with genuine California redwood, all bronze-finish operating hardware already attached, and interior wood trim cut and fitted ready to be nailed in place. This Package Window is engineered particularly for the low-cost frame dwelling, although it is entirely adaptable for brick veneer homes also.

Features are as follows: All moving parts are of steel, precision-fitted at the factory for weather-tightness; Bonderizing provides rust protection for the finish; glazing is done with special steel sash putty; unit takes prefabricated Fenestra inside screen and standard wood frame storm sash on exterior; special inside wood trim cut to exact length mitered, fitted and ready to nail when inside wall around window is finished, is supplied if desired.

Top-hung storm sash linked to steel casement ventilator opens out automatically at the bottom when ventilator sash is open, and provides a canopy for protection from snow or rain.

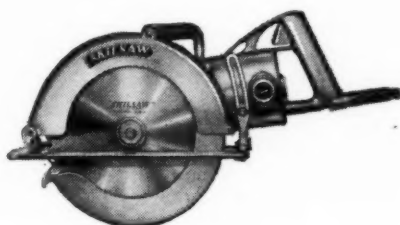
Eight standard sizes of the Package Window are available.



OUTSIDE installation and interior views of new Package Window.

New 12-Inch Electric Hand Saw

AN improved new portable electric saw, Model "127", has been added to the line of Skilsaw, Inc., Chicago, which has a 12-inch blade and cuts to a depth of $4\frac{3}{8}$ inches. It is very useful for heavy construction work such as all timber cutting on docks and dam superstructures, and it is used by railroads in bridge construction work and in cutting ties in maintenance-of-way work. The saw is very practical for cutting many types of building tile and for continuous cutting of copper sheets up to $\frac{5}{8}$ -inch thick, lead sheets up to 2 inches thick, and many types of heavy gauge corrugated metals. It will rip and cross-cut timbers up to 4 inches full, and bevel-cut lumber 3-5/16 inches thick at 45 degrees. The blade has a free speed of 2400 R.P.M. and is protected by an automatic spring-operated telescoping guard that rotates on ball bearings.



HEAVY duty electric hand saw with 12-inch blade cuts to a depth of $4\frac{3}{8}$ inches.

Airless Electric Painting Machine

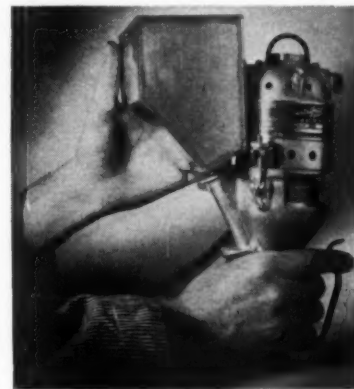
A NEW product of interest to contractors, builders, window and store decorators, sign and display builders, and others, is the airless electric hand painting machine now being manufactured by Jas. H. Matthews & Co., New York City.

The principle of operation is as follows: The paint feeds, by vacuum, from the container to the machine; it is then pumped by worm to the distributor. Here, by centrifugal action, the paint is subdivided into uniform particle size and distributed to wall and ceiling surfaces in a graduated film. This permits the operator to overlap his strokes and assures even application of paint.

The machine is a complete single unit, and is powered by simply plugging into electrical sockets. The motor has conveniently positioned starting and stopping control, and the paint is applied at will by trigger touch. All parts can be thoroughly cleaned within three minutes.

When covering walls and vertical surfaces, the machine paints a maximum stroke of eighteen inches in width, which may be graduated down to a minimum of one-half inch. The operator, standing in a pivotal position, can comfortably paint 60 square feet of ceiling.

It is recommended for inside or outside painting of factories, stores, houses, office buildings, apartments, etc., and for industrial coating, waterproofing, and stenciling of large areas.



CENTRIFUGAL action, instead of air pressure, is operating principle of this new painting machine.

New Portable Electric Sander

A SANDING tool designed to replace tedious hand sanding in close quarters preparatory to applying filler, stain or paint, and called the Sterling Gyro electric sander, has been announced by the Sterling Products Co., 2457 Woodward Ave., Detroit. This tool, which is suitable for use on wood, metal or other surfaces, may be used also for sanding between coats and for final rubbing or polishing.

Weighing but $3\frac{1}{2}$ pounds, and well balanced, the Sterling Gyro is easy to handle in any position—horizontal, vertical or overhead; it plugs into any 110 or 220 AC or DC circuit. It uses a quarter of a standard 9 x 11 sheet of any make or type of abrasive paper without waste, and a means for attaching the abrasive is provided on the sanding pad of the sander. Cloths for rubbing may also be attached in like manner.

The universal electric motor operates at the rate of 4000 R.P.M., delivering to the sanding pad an elipto-circular motion.

WORKMEN using new portable electric sanders on the hard-to-reach spots.



G-E Electric Water Heater

THE General Electric appliance and merchandise department, Bridgeport, Conn., has announced a new electric water heater which is designed specifically for new or modernized electric kitchens but is equally appropriate for general purposes.

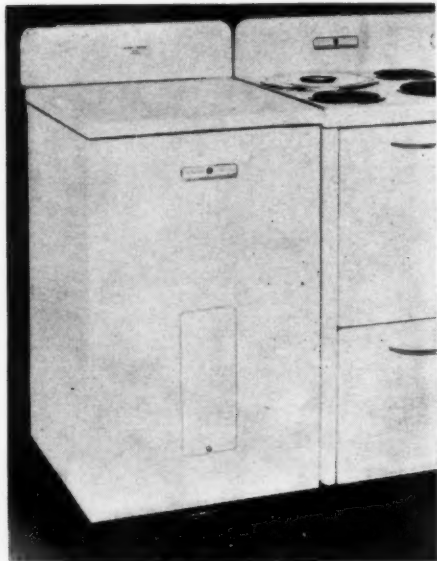
This square-shaped heater, which is finished in white and has a galvanized copper bearing steel tank, has a capacity of 18 gallons, is 21 inches wide, $22\frac{1}{2}$ inches deep, and 36 inches high. A back-splasher can be supplied as an accessory, or as part of the water

(Continued to page 80)

heater, and is designed for installation next to and in harmony with a General Electric range or other standard-height appliance or cabinet. The backplasher has the same thickness as that on a G-E range so that it lines up evenly in installation.

A round-type heater of 10-gallon capacity, approximately 17½ inches in diameter and 31 inches high, is also being made. This model was designed to fit under the work surface in a kitchen and particularly for use with the G-E electric dishwasher, and has the advantage of permitting installation in the kitchen close to the

sink for maximum efficiency and economy. It is finished in white and has a galvanized copper bearing steel tank.



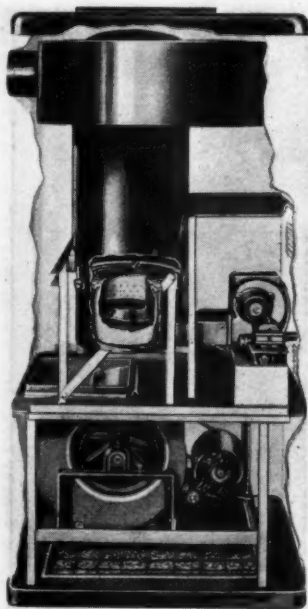
NEW electric water heater unit fits alongside of range or other equipment in the kitchen.

Oil-Fired Winter Air Conditioning Unit

AN 80,000 BTU capacity oil-fired furnace is one of three models recently added to the line of Evans Products Co., Detroit, Mich. This particular Evanair model is built for floor space economy, occupying a space 26 x 33 inches with a height of 69 inches. Engineered for first floor installation, this fully automatic unit is readily adaptable to simplified duct arrangement with provisions for return air intake at bottom or back. Three stages of fire controlled by a two-pole thermostat eliminate periods of on-and-off operation and provide an even floor heat.

Stainless steel vaporizing burner is supplied with air by high pressure forced draft operating under three-stage controls. Safety air control permits natural draft operation in case of current failure. Silent, spring mounted centrifugal blower, standard type filters, and combustion chamber of heavy steel with radiating fins are features. Finish is gray opalescent baked enamel.

CUT-away view of new oil-fired automatic heating unit for first floor installation.



Efficient Coal-Burning Winter Conditioner

THE Moncrief Aristocrat models of The Henry Furnace & Foundry Co., Cleveland, Ohio, line of winter air conditioners are now equipped with a device known as the Wind Box which effectively distributes the flow of air over the heating elements and contributes much to efficiency. The ports, or openings, are placed so that air is directed against the various surfaces of the heating element in proportion to their ability to impart heat. The more highly heated surfaces receive the more air; and all sections of the heating element are supplied with air at high velocities so

that the heating element transmits its full quota of heat to the circulating air.

Moncrief Aristocrat air conditioners are made in a wide range of sizes to burn coal; later if desired a stoker, oil burner or conversion gas burner may be added and the steel heating element will still operate at a relatively high degree of efficiency.



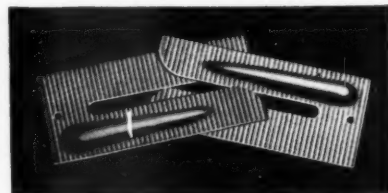
EFFICIENT air distributor called Wind Box.

New Metal Shim

THE Loxit Co., 605 W. Washington Blvd., Chicago, has recently placed on the market a new metal shim to give accurate, permanent, and yet inexpensive shimming for all types of leveling and alignment work, and to replace shingles, wood wedges, and other makeshifts. These new shims were invented by L. F. Urbain, architect, to fill a need long experienced in leveling floor sleepers, and other construction items, for shimming furring, door and window jambs, etc.

The device consists of metal plates used in pairs; they have interlocking legs, one of which has been stamped with a graduated raised portion which forms the wedge. The plates have been crimped so as to give a positive interlock and assure permanent position when driven into place. They are available in terne plate and galvanized in three weights.

WHEN shims are driven together, necessary level or alignment is secured.



Multi-Purpose Floor Machine

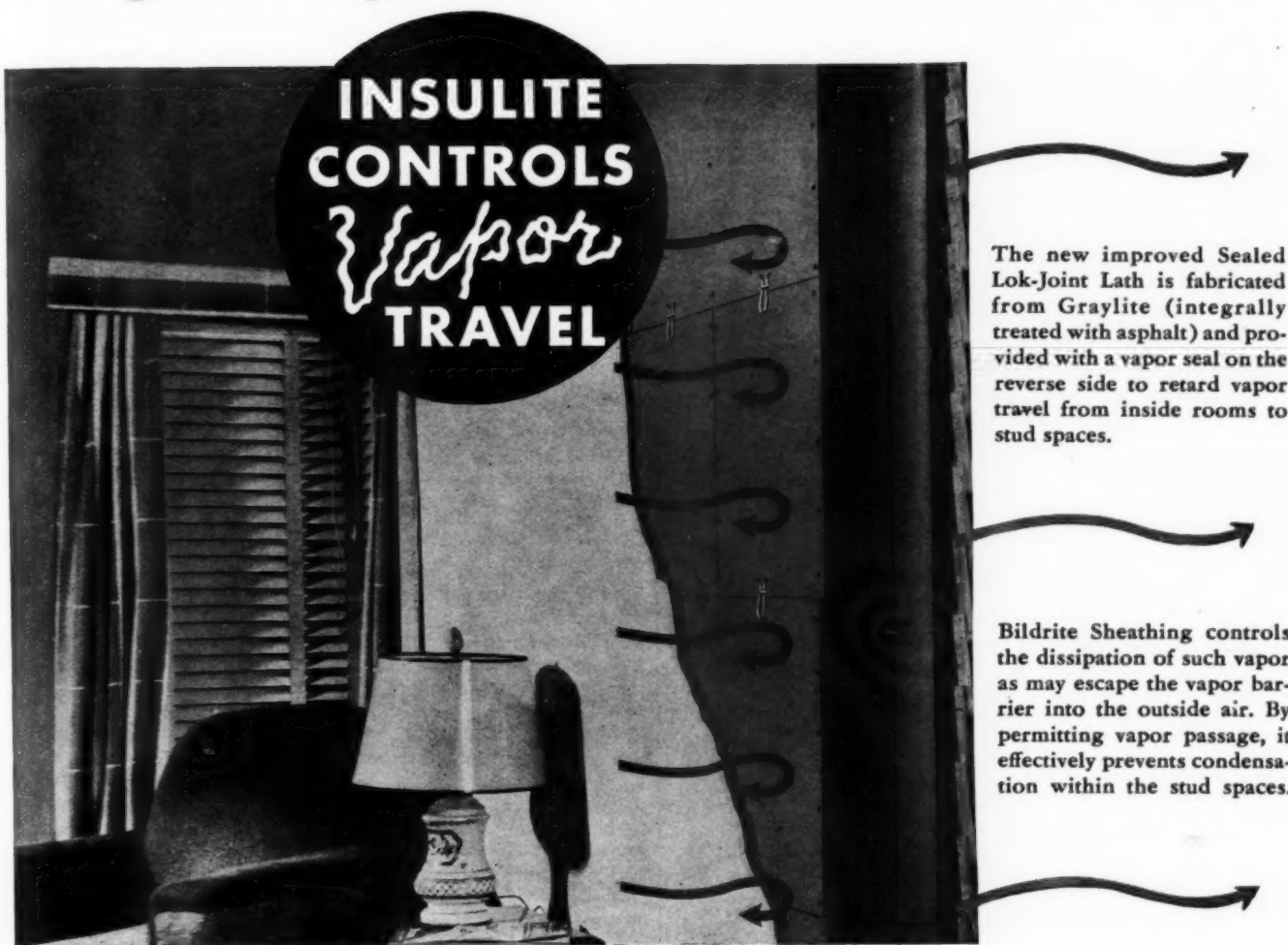
A NEW sander known as the "Chief" is offered by the Hilger Co., St. Cloud, Minn. A feature of the product is that it provides for wax polishing, steel wool buffing and scrubbing attachments, and can be quickly changed to meet the requirements of a variety of jobs. It is manufactured according to the following specifications:

Three-fourth H.P. 110 volt AC unless otherwise specified; 1725 R.P.M.; condenser capacitor steps up starting torque and so prevents burning out fuses; 5" dia. x 8" aluminum drum, with simple positive one-piece paper clamp; ball bearings lubricated by sealed grease chamber; V-belt drive with simple tension adjustment; dust fan powered by its own high speed universal motor; strong cast iron and aluminum frame.

THE "Chief" floor machine (right) and a smaller model sander.



Safeguard Against Destructive Condensation



The new improved Sealed Lok-Joint Lath is fabricated from Graylite (integrally treated with asphalt) and provided with a vapor seal on the reverse side to retard vapor travel from inside rooms to stud spaces.

Bildrite Sheathing controls the dissipation of such vapor as may escape the vapor barrier into the outside air. By permitting vapor passage, it effectively prevents condensation within the stud spaces.

WITH THE NEW WALL OF PROTECTION

NO HOUSE is modern unless the condensation problem has been squarely met and overcome.

Vapor is always prevalent in the air. It generally travels from warm to cold areas, quickly passing through unprotected inside walls into stud spaces and there condenses.

The New INSULITE WALL OF PROTECTION controls vapor. The combination of *Sealed Graylite Lok-Joint Lath* effectively retards the passage of vapor, while *Bildrite Insulating Sheathing* allows any possible vapor within the stud spaces to escape.

Sealed Graylite Lok-Joint Lath is the same, safe, rigid plastering surface. The famous "Lok" secures each unit, reduces danger of plaster cracks to the minimum, thus assuring smooth walls and ceilings.

Bildrite Sheathing with four times the bracing strength of wood sheathing horizontally applied, offers you the ultimate in strong, practical insulating sheathing. Together these insulating materials form the INSULITE WALL OF PROTECTION.

Write Insulite, Dept. AB50, Minneapolis, Minnesota, for complete information describing how the INSULITE WALL OF PROTECTION controls vapor, guards against condensation within wall areas.

INSULITE PRODUCTS INCLUDE:

Structural: Sealed Graylite Lok-Joint Lath, Graylite Lok-Joint Lath, Ins-Lite Lok-Joint Lath, Bildrite Sheathing.

Interior Finishes: Ins-Lite, Graylite, Smoothcote, Satincote in 4 washable colors, Hardboards, Acoustilite, Fiberlite

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INSULITE



MINNEAPOLIS
MINNESOTA

THE ORIGINAL WOOD FIBRE STRUCTURAL INSULATING BOARD

News of the Month

Building Activities and Meetings

April Residential Building Volume Up from '39; Ends Downward Trend

RESIDENTIAL construction volume for the period Apr. 1-22 for 37 eastern states, as reported by F. W. Dodge, amounted to \$92,956,000, as compared to \$78,912,000 for the same period last year. This indicates that the total April volume will be well ahead of April '39, which reverses the trend for the first three months of this year, each of these having been slightly below the same months of last year.

Statistics for the four classes of construction are as follows:

37 Eastern States	Apr. 1-22, '40	Apr. 1-22, '39	March 1940
Residential	\$ 92,956,000	\$ 78,912,000	\$121,708,000
Non-Residential	69,287,000	67,922,000	73,735,000
Public Works	40,511,000	58,778,000	58,905,000
Utilities	10,170,000	25,389,000	17,830,000
Total	\$212,924,000	\$231,001,000	\$272,178,000

Announce Heating Research Program

THE Institute of Boiler and Radiator Manufacturers has announced that a contract has been signed with the University of Illinois for the construction and operation of a Research House at Urbana, Ill., in the interests of radiator heat.

Fourteen of the members of The Institute, who are manufacturers of cast iron boilers and radiators, have subscribed a total of \$50,000 to cover the cost of constructing and equipping the house and assuring its operation for a minimum period of three years.

The purpose of this research program may be generally described as, first, a study of the factors having to do with the installation, operation and maintenance of various types of heating systems, and, second, a study of the factors pertaining to the atmospheric environment produced and maintained.

A six-room dwelling is being erected for use in studying the results obtainable with various types of installations including, among other things, the following:

1. Operating characteristics, such as balancing of system; rate of heating up of rooms; systems of control; rate of heating up of units.
2. Costs and economies of operation.
3. Distribution of heat in all parts of house; floor to ceiling air temperature gradients; inside surface temperature of walls, floor and ceiling.
4. Heat losses.

The extensive laboratory equipment of the University of Illinois will be utilized to supplement the work which will be carried out in the Research House, particularly in the development of technical data in connection with radiator heat.

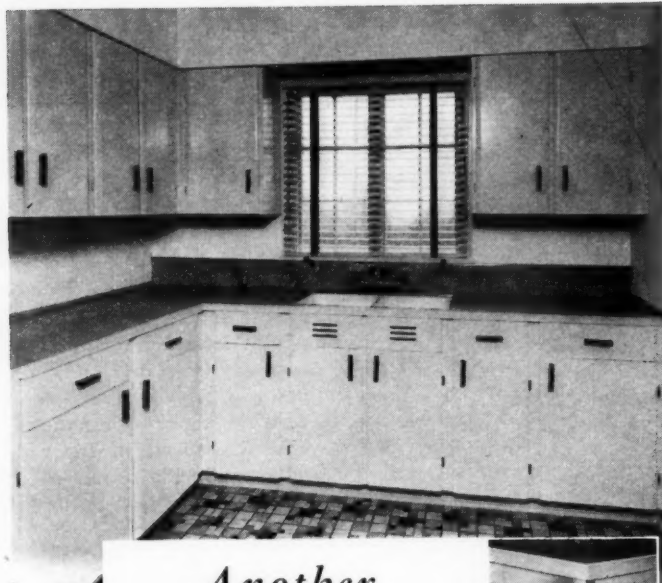
One important objective of the Research program is to expedite the development of heating systems which will fit the restricted cost and space requirements of low cost residences.

Opens Pacific Coast Office

ON April 1 the Insulite Company opened its Pacific Coast office at 604 Mission St., San Francisco, Calif. The new office will handle the company's sales in the states of California, Oregon, Washington, Idaho and Nevada. Several new sales representatives and engineers are now being assigned to new territories. The Pacific Coast District is under the supervision of L. C. Monahan who, prior to his coast appointment, was the company's district sales manager in New York.



L. C. MONAHAN, head of new Insulite Pacific Coast office.



Another

BILT-WELL

Aid to Better Profits

**NU-STYLE
KITCHEN CABINETS**

- Stock Sizes for Every Kitchen
- Priced Low for Easy Sales

**BILT WELL
MILL WORK**
REGISTERED

Think of the tremendous market for beautiful, time-saving kitchen cabinets that combine *quality* and *economy*! Every woman wants to

modernize and glorify her kitchen. Alert dealers and contractors who sell famous BILT-WELL NU-STYLE cabinets can take advantage of this and step-up volume and profits easily.

For new homes or remodeling jobs, NU-STYLE Kitchen Cabinets are equally adaptable because they are made in graduated sizes to fit any kitchen. And . . . they are ready for immediate shipment in standardized stock units. There is no delay or inconvenience—no waiting for your order to be put into production. Service like that builds valuable customer goodwill for you.

Door and drawer design insures added protection against dust—triangular blocks make inside corners easy to clean—finest construction and materials assure countless years of service. Streamline styling matches kitchen appliance designing.

Here is a complete line of kitchen cabinets priced amazingly low because the cost is based on a mass production level. Write today for Free literature and full details.

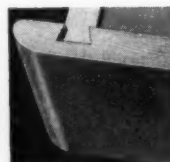
CARR, ADAMS & COLLIER COMPANY

5 Storm Avenue

Dubuque, Iowa

Manufacturers of Famous BILT-WELL Millwork

All edges safe and easy to clean.



Dovetailed drawer construction insures durability.

Mineral Wool Centennial Convention

MEMBERS of the National Mineral Wool Association, who manufacture 90 per cent of all the mineral wool produced in this country, will meet in Chicago May 15 and 16 to observe the one hundredth anniversary of the making of the material.

Mineral wool, according to the U. S. Department of the Interior, was first made in Wales, the British Isles, in 1840. Much the same process is still used in the manufacture of the material. It consisted of passing a stream of molten rock, slag or silica through a jet of high velocity steam. The impact of the steam on the molten material blew it into thin, silk-like curls and whorls. These were gathered together to make the world's first modern insulation.

Today, mineral wool is annually used in several hundred thousand homes to insulate them against winter cold and summer heat. It is also finding an increasing field as an insulation for airplane cabins, steamships, trains and buses.

Kuehn Resigns from Milcor

AT THE recent annual meeting of the Board of Directors of the Milcor Steel Company, Milwaukee, Wis., Louis Kuehn announced his retirement and his resignation as chairman of the Board of Directors. He has just finished thirty-eight years of aggressive activity devoted to the development of the company up to its present position in the industry.



LOUIS KUEHN

When Mr. Kuehn organized the company to manufacture sheet metal building products, it was called the Milwaukee Corrugating Company. Since that time, it has steadily grown and has added so many new products to its line that the old name no longer told the story; since July 1, 1930, the company has been known as the Milcor Steel Company.

Seek Name for New Glass

A PROCESS of glass making, commercially adaptable to large scale production, which permits the sale of a superior and revolutionary product at regular window glass prices, has been adopted by the American Window Glass Company, Pittsburgh.

This new, improved Lustraglass, in addition to its greater clarity of vision because of no appreciable distortion or waviness, brings to the building world other important advantages: it demonstrates an amazing high tensile strength; it is really "white" and free of that characteristically green window glass cast and displays a brilliant jewel-like luster all its own; it transmits a substantial amount of the shorter (more valuable) ultra-violet rays of sunlight.

The manufacturer states, "Our worry today is just how to classify a sheet like this that is definitely a new species in itself. You can't call it window glass because it is almost entirely free of that waviness and distortion which has always distinguished window glass from plate. On the other hand, you can't call it plate glass because it is not made by the plate glass process, and although it looks like plate, it sells at window glass prices.

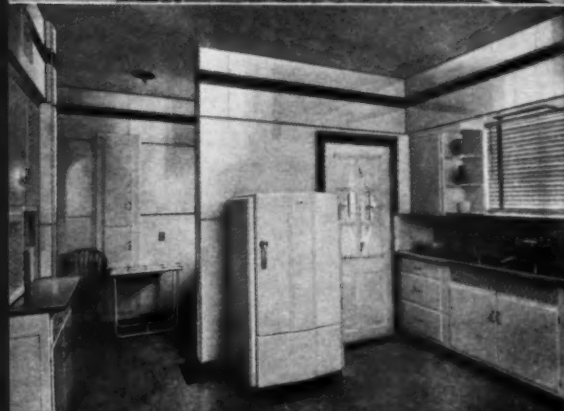
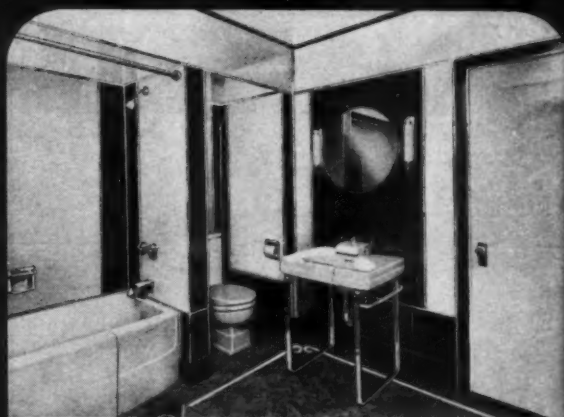
"What would you call it?" is a question this company is asking readers of its advertising.

Develop Corners for Asbestos Siding

WITH the aid of an inconspicuous little corner clip, it is reported that the time required for the proper fitting of asbestos siding at corners and around door and window frames is largely eliminated. These individual zinc corner strips are called Kokomo Korner, give added protection, and provide a trim, neat appearance. They are made by Double Grip Brass Clip Co., Kokomo, Ind.

New Paint Plant for Southwest

THE Pittsburgh Plate Glass Company shortly will begin the construction of a new \$350,000 paint plant at Houston, Tex., to serve customers in that territory. The new plant will be a complete unit, manufacturing a full line of paints, varnishes, and lacquers. It will be built on a 21-acre tract of land and will comprise three main buildings, auxiliary units, and storage tanks.



PUT SURE-FIRE "SALES APPEAL" INTO
THE HOMES YOU BUILD...with *Marlite*

● Give your homes that air of "standout" quality... "top off" their other "plus" features with the sparkling clean-cut beauty of Marlite in kitchen and bath that lands your prospect right on the dotted line. And don't forget—only Marlite gives you all these advantages in a single pre-finished wall material.

UNLIMITED DECORATIVE SCOPE. Over 100 colors (from pastels to full strength colors) and many patterns: plain, tile, genuine wood-veneers, and "Carstenite" panels to choose from.

EASY TO CLEAN. Marlite's glass-smooth surface is easily kept spic and span with a damp cloth.

ECONOMICAL. Reasonable in first cost... saves expense of periodic renovating required by less durable materials.

ADAPTABILITY. Unmatched range of applications possible due to wide variety of colors and patterns available.

EASY TO INSTALL. Large wall-size panels (4 ft. by 12 ft.) readily cut to size and applied to wall surface, new or old, curved or flat, by carpenters in a few hours' time.

Write for FREE Colorful Booklet on Marlite Home Interiors. See our Catalog in Sweet's 11/34.

*Carstenite is the trade name of the raw, unfinished panels.

MARSH WALL PRODUCTS, INC.
53 MARSH PLACE • DOVER, OHIO

See Marlite Exhibit at the New York World's Fair, Home Building Center



**FOR CREATING
BEAUTIFUL INTERIORS**
WALL-SIZE PANELS IN LUSTROUS COLORS,
TILE-PATTERNS, MARLITE GENUINE WOOD-
VENEERS AND "CARSTENITE" PANELS

SPEAKING OF SCREENS

builders and buyers
alike prefer

THE WESTERN PINES



Home owners and buyers appreciate the fact that Western Pine screens are light to handle, durable, and hold their shape.

Suggest to your clients that they equip their homes *now* with screens made of Western Pines.

**THE WESTERN PINES WILL DO YOUR
NEXT JOB BETTER—TRY THEM**

Western Pine Association, Yeon Building,
Portland, Oregon

*Idaho White Pine *Ponderosa Pine *Sugar Pine

***THESE ARE THE WESTERN PINES**

New Concrete Pier and Sill System for Low-Cost Homes

FOR Title 1 low-cost homes below \$2500, a method of building foundations which meet FHA requirements and can be erected at the lowest cost consistent with sound construction has been devised by Zorro D. Ruben and Associates for Bell Savings Building and Loan Association, Chicago.

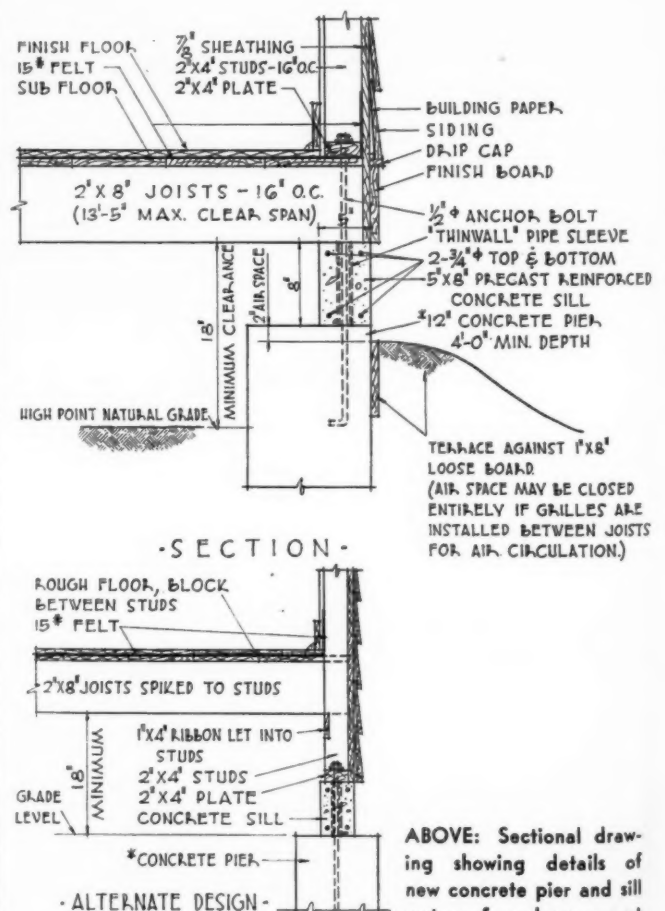
The FHA requires a foundation of masonry, which may be concrete piers with wood supporting beams or sills. No wood is allowed closer to the ground than eighteen inches, excepting that on the exterior wood may be brought within eight inches of the ground.

This requirement prevents the customary use of wood skirting to close the opening between the supporting beams and the ground and has made it necessary to use metal skirting or expensive masonry foundation walls.

The new system illustrated below replaces these methods, improving the appearance of the home and reducing its cost. To use it, order precast concrete beam sill to correct length in single spans between piers; have corner beams mitered at end; pipe sleeve left $3\frac{1}{2}$ inches from end to take anchor bolt. Place beams on concrete piers before concrete sets, supporting on forms; square and level; protect for 24 to 48 hours.

Alternate design provides for use of a ribbon to support joists and a stud wall resting on a plate fastened to the beam. This may be used to advantage where ground slopes and when additional clearance is desired under the house. Construction requirements are the same, but in this case grilled vents must be installed between joists to provide circulation of air. Note alternate detail does not require terracing.

Piers may be 12 inches round poured in furnace pipe, rammed solid and formed above ground. If alternate design is used, piers may be centered under beam and will not require square forms.



*PIERS MAY BE SPACED AS FOLLOWS:
13'-6" O.C. IF BEAM CARRIES ROOF LOAD
11'-6" O.C. IF BEAM CARRIES FLOOR LOAD
10'-0" O.C. IF BEAM CARRIES BOTH LOADS

ABOVE: Sectional drawing showing details of new concrete pier and sill system for low-cost homes. Left: Alternate method which does not require terracing.

MAKE THIS TEST -
Prove **BRIXMENT is BEST!**



1

Take some Brixment mortar and some mortar made with lime and cement. Try shoving a full head-joint with each mortar. You'll find that with the Brixment



2

mortar (1), it is much easier to shove the brick accurately into place, with a full head-joint, than it is to do the same thing with the other mortar (2).

BRIXMENT Mortar is Much More Plastic!

Probably the one most important characteristic any mortar can possess is *plasticity*. Within certain limits, plasticity is the greatest single factor not only in the *economy* of the brickwork, but also in its strength, its neatness and its resistance to the passage of water.

For nearly twenty-five years, bricklayers all over the United States have said that *Brixment makes the most plastic and workable mortar they know*. Its working qualities are comparable to those of straight lime putty. Because of this unusual plasticity, a bag of Brixment will carry three full cubic feet of sand and still make an ideally workable

mortar. . . . *Make* the test above—or better yet, *try* Brixment mortar on your next job—and *see* the difference for yourself.



BRIXMENT

For Mortar and Stucco

FOR EFFICIENT AND ECONOMICAL DAMP-PROOFING

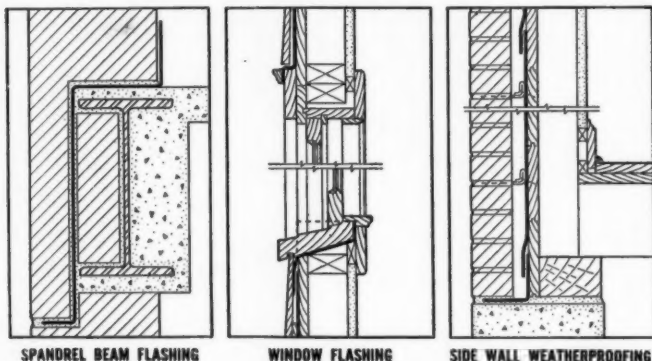
FROM CELLAR TO ROOF

Anaconda "Electro-Sheet" Copper bonded to standard, well-known building papers, fabric or asphaltic combinations

THE availability of electro-deposited thin sheet copper in long lengths, and in widths up to 60", has made possible the production of the above materials for sealing buildings against heat and cold, wind and moisture.

Anaconda "Electro-Sheet" Copper is rustproof, verminproof, non-inflammable, strong and impervious to air, water and dampness.

In thicknesses of .0013", .0027" and .004" (1 oz., 2 oz. and 3 oz. per square foot)—bonded to high-grade building papers, fabric or asphaltic compounds—"Electro-Sheet" Copper is extremely flexible, easy to install and readily available from building material dealers. 4079



ITS ESTABLISHED USES:

Door and Window Flashing
Foundation Waterproofing
Side Wall Weatherproofing
Behind Wood—Stucco—Brick and Stone Veneer
Concealed Flashing
Spandrel Beams—Windows—Shower Pans

Write today for free samples of these materials and names of the manufacturers. (We do not make or sell "Electro-Sheet" laminated to other materials, but furnish the plain copper to leading manufacturers.)

"ELECTRO-SHEET" Anaconda Copper

THE AMERICAN BRASS COMPANY

General Offices: Waterbury, Connecticut

In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ontario
Subsidiary of Anaconda Copper Mining Company



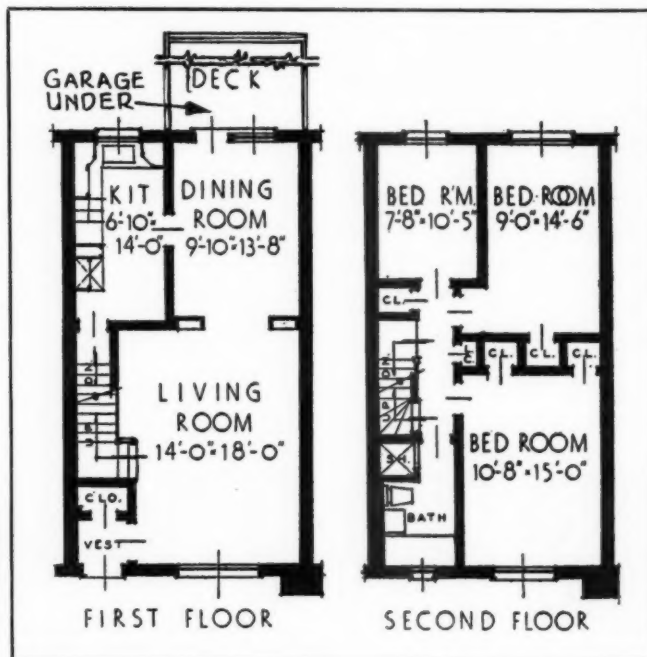
English Town Houses

New Style Attached Homes in Small Groups Built by Insured Homes, Inc.

THE English Town Houses being erected at Main Street and 73rd Terrace at Kew Gardens, Long Island, have introduced a new type of private dwelling in Queens County. These dwellings are arranged in small groups to combine the attractions of the open spaces of the suburbs with the economy of attached house construction.

Ben Hess, member of the Insured Homes organization who is in charge of the construction of the English Town Houses, points out that the dwellings cover only about 30 per cent of the land purchased for this development, leaving approximately 70 per cent for open park space, gardens, drives and walks. Mr. Hess studied engineering at Pratt Institute and was in charge of the construction of 158 detached suburban dwellings in the Insured Homes at Bellerose community, as well as in the construction of 95 detached dwellings in the Insured Homes at St. Albans community.

The Insured Homes organization has been operating in Queens
(Continued to page 90)



TYPICAL floor plan, interior unit of Insured Homes' English Town House at Kew Gardens, L. I. Garage at rear, with sun deck above.



NATIONAL *Red Cedar Shingle* OVER-ROOFING MONTH

NATIONAL *Red Cedar Shingle* OVER-ROOFING MONTH



**Consult your lumber dealer . . .
He will arrange details**

A recent issue of the magazine, *Better Homes & Gardens*, made this statement: "When you need a new roof, you may learn that a guarantee is no better than the firm which makes it. The only way to get a real guarantee is to employ a responsible firm. Be certain that your contractor is no wandering workman, that he has liability insurance and pays his bills."

Consult your established local lumber dealer. He is a taxpayer with financial responsibility and has a thorough knowledge of building requirements here suited to your local conditions. He can arrange any terms or advice how to obtain them.

EASY AS A.B.C.—RIGHT OVER THE OLD ROOF!



*Saturday Evening Post
Full Page—May 4th issue*

Red Cedar Shingles Offer Much

In the choice of roofing materials, Red Cedar Shingles offer you more advantages than any other material. They have not yet been surpassed in natural insulation, good appearance. Current application gives life, natural insulation, good appearance. Current application gives life, natural insulation, good appearance. Current application gives life, natural insulation, good appearance.

CERTIGRADE
Red Cedar Shingles

FOR GUARANTEED GRADES AND QUALITY, SPECIFY—

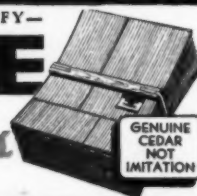
CERTIGRADE

Red Cedar Shingles

Certigrades pass official inspection for grade and quality.



Sold only by established lumber dealers.



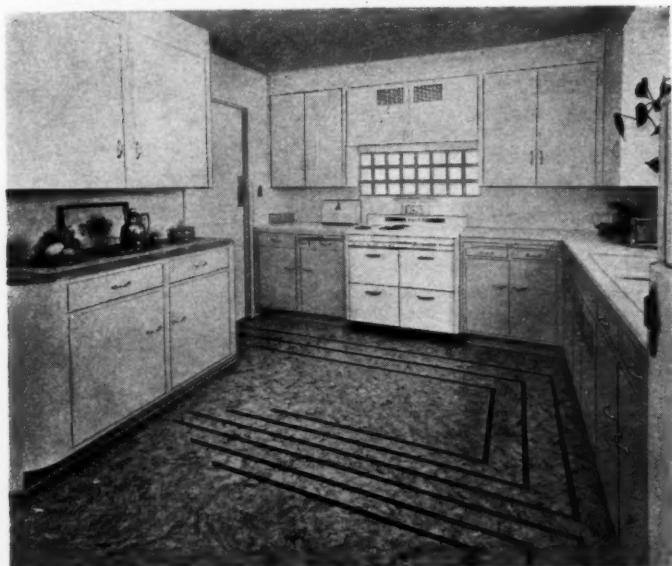
CASH IN ON THIS BIG DRIVE

The Red Cedar Shingle Industry is putting on a tremendous advertising campaign to stimulate the over-roofing business through the legitimate channels of the contractor, shingler, carpenter, and lumber dealer.

The *Saturday Evening Post* on May 4 will have a two-color full-page ad—other magazine advertising includes *American Home*, *Better Homes & Gardens*, *Farm Journal*, *Country Gentleman*, *Hoard's Dairyman*, and *Successful Farming*—totaling 42 million readers. By getting in touch with your lumber dealer you can get your share of this business.

Write for your copy of *Over-roofing Folder*. Address Red Cedar Shingle Bureau—Seattle, Wash., U. S. A., or Vancouver, B. C., Canada.

Here's a comfortable kitchen linoleum in a Pomona, California, residence. And it's eye-appealing, too, with its field of Marbelle and feature strips of Chinese red and black. Architect: Milton J. Black, Los Angeles.



I practically **LIVE** in the kitchen
...that's why I want it to be livable



"I spend more time in the kitchen than in any other room in the house. Naturally, I want a kitchen that's really comfortable."

THIS statement is true not of one—but *thousands*—of women. And you can cater to that demand by installing kitchen floors of Armstrong's Linoleum.

There's comfort in the resilience of this linoleum—for it cushions footsteps and is extremely restful to women who are on their feet all day.

There's comfort in the ease with which they can clean Armstrong's Linoleum—for dry dusting, occasional washing and waxing, are all the care it needs.

And there's psychological comfort in its pleasing colors. Over 200 different patterns are available in Armstrong's Linoleum. They run right through the material so they won't scuff or wear off.

Armstrong's Bureau of Interior Decoration will be glad to assist you in planning appropriate floor designs. For complete information, see *Sweet's* or write for file-sized booklet. Armstrong Cork Company, Floor Division, 1218 State Street, Lancaster, Pa.



ARMSTRONG'S FLOORS LINOLEUM

Rubber Tile • Linotile (Oil-Bonded) • Asphalt Tile • Cork Tile • Linowall Wall Covering



END view
of 6-unit
Town House
group.

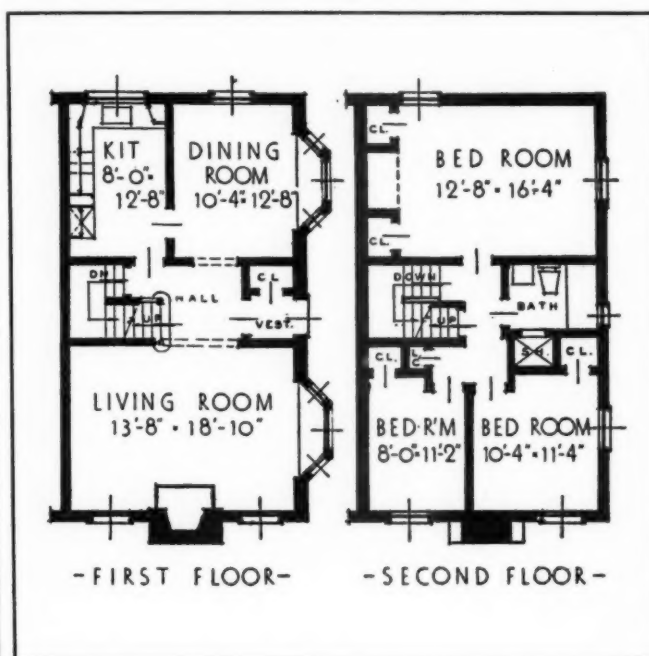
English Town Houses

(Continued from page 88)

and Long Island since 1926. It comprises a group of builders who have applied a principle similar to the General Motors plan of production to the home building field, erecting houses of various types in different localities to suit buyers in different price classes. Associated in all the Insured Homes projects is Sidney Kessler, who studied architecture and construction at Pratt Institute, and who specializes in the selection and purchase of land for the developments and in the community planning of each project. Communities have been completed and sold in Astoria and Laurel Hill. A colony of 178 attached houses is now being completed by the Insured Homes in Ridgewood, under the direction of Alex Kessler. Another group of 43 attached houses is now under construction in the Insured Homes in Greenpoint project, which is being sponsored by Haskell Hess, who received his schooling at Lafayette.

The English Town Houses of the Insured Homes at Kew Gardens are being erected from plans by Arthur E. Allen, well

(Continued to page 103)



END dwelling unit in English Town House, with large bay windows in living and dining rooms. Space for extra rooms in attic.

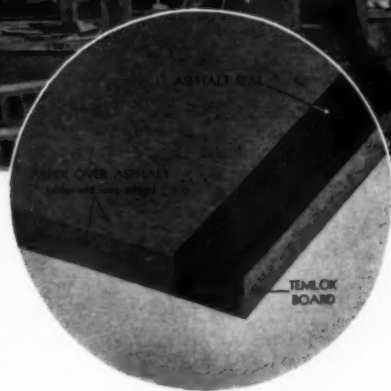
EVERY JOB HELPS SELL ANOTHER WHEN YOU INSTALL

Temseal Sheathing

THE DOUBLE-SEALED LASTING INSULATION



Applying Temseal Sheathing is a quick and easy operation, as this illustration of the MacFarlane residence, Mt. Clemens, Michigan, shows. Hubarth & Schott Company were the lumber dealers who supplied the material; Wolverine Shingle & Lumber Co. of Detroit, Michigan, were the wholesalers.



EVERY new home owner wants insulation in his house. But he wants to be sure that the material he buys keeps its efficiency—that fuel bills stay low, and that the house remains comfortable to live in, year after year.

You create that assurance when the houses you build are insulated with Armstrong's Temseal Sheathing! This modern insulating material is doubly sealed at the factory against air and moisture infiltration. It is first coated with flexible, non-cracking asphalt, then further protected by strong kraft paper. This double guard means that Temseal keeps its insulating efficiency longer.

That's only one of the sales arguments which are helping to build up customer good will for Temseal. This new sheathing makes it unnecessary to use building paper or felt—and that saves both time and money. It adds structural strength,

helps make the building more rigid. Also, it's quicker and easier to install. Your customers' satisfaction with Temseal influences other new home owners—helps you sell more houses!

Temseal Sheathing is one of the well-known Temlok Insulation Products—made from moisture-resistant fibres of long leaf southern yellow pine. The special, low melting point asphalt used to seal its surface stays flexible—doesn't crack during installation. Temseal comes in the standard sheathing thickness of $2\frac{5}{32}$ " in

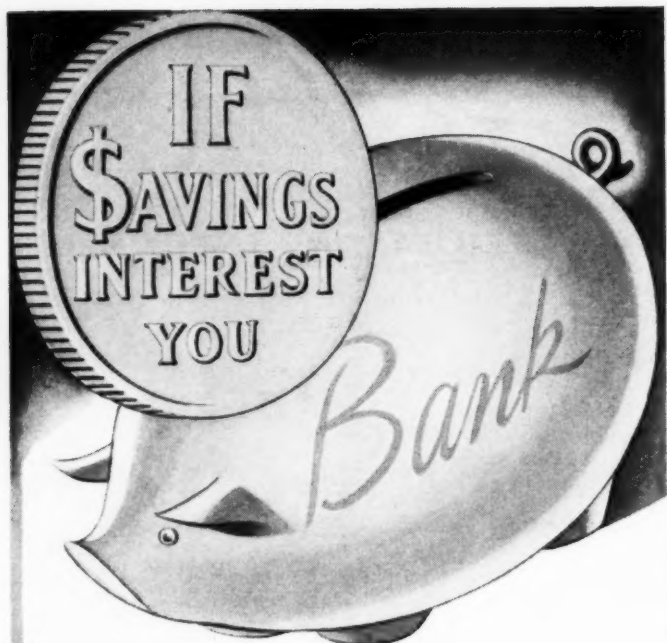
boards 4' wide by 8', $8\frac{1}{2}$ ', 9', $9\frac{1}{2}$ ', 10', and 12' long. It is also available in the convenient 2' x 8' size.

Temseal is made by the makers of famous Armstrong's Linoleum—added assurance of a quality product. Write for a sample and further details to Armstrong Cork Company, Building Materials Division, 979 Concord St., Lancaster, Pennsylvania.



ARMSTRONG'S TEMLOK INSULATION

De Luxe Interior Finishes • Lath • Sheathing • Hardboards • Monowall



DU PONT Chromated Zinc Chloride Wood Preservative improves wood in many ways. It adds effective protection against decay and termite damage. It reduces inflammability and assures long, uninterrupted load bearing strength.

SAVES OWNERS' MAINTENANCE COSTS

Residential and industrial buildings designed for long service, attractive appearance and freedom from repairs should be protected by the use of DU PONT Chromated Zinc Chloride treated lumber at vulnerable points. Wood construction protected by this preservative will outlast untreated wood by 3 to 10 times.

Add durability to the structures you build by using lumber preserved with DU PONT CZC.

Write today for your copy of "Stop Decay and Termite Damage."

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
GRASSELLI CHEMICALS DEPARTMENT
WILMINGTON, DELAWARE

Specify



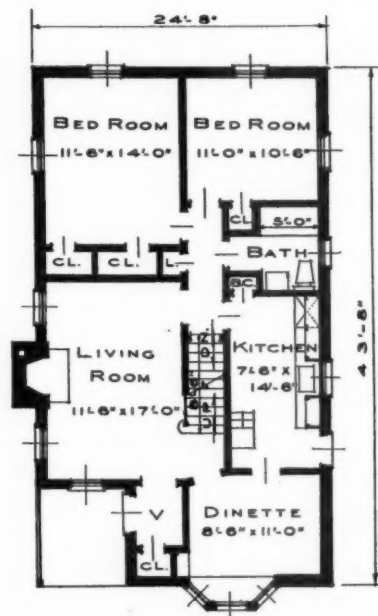
Chromated Zinc Chloride
TREATED LUMBER



50 Sold in Less Than 1 Year

WILLY Bruggemann was an experienced carpenter with a good reputation on Long Island, and Reinhold Schafer an equally well known and experienced mason. They frequently worked on the same jobs. Several years ago they got together, and the combination has proved a mighty good one.

Dover Park at Valley Stream, Long Island, is now nearing completion, and 50 houses were sold there in less than a year. Bruggemann and Schafer go in for Dutchy little cottages in the \$5,000 class, in which they combine second-hand brick, stucco, stone and asbestos shingles. High-hat architects might not praise them, but the buying public



FIRST FLOOR PLAN

BRUGGEMANN and Schafer floor plan, which is a long narrow house with side entrance. TruCost figures on page 120.



seems to like them, and they are extremely well built and well equipped for their price class.

Specifications of the Dover Park homes include Insulite Bildrite sheathing, Burnham boilers with Electrol oil burners and Thrush hot water circulators, Chase copper water tubing, Stanley and Sargent hardware, Standard plumbing fixtures, Welbilt Overhead garage doors, U. S. Gypsum asphalt shingles, Armstrong linoleum.

In addition to the two bedrooms downstairs, houses have space for extra bedrooms upstairs, which may be finished later. The house makes an appealing proposition for large families in the \$35 to \$40 a month rent class.



BRICK, stone and asbestos shingles are combined in this typical Bruggemann and Schafer exterior.



INSULATING board sheathing is used on all Bruggemann and Schafer houses, providing a warm, dry and well insulated house.



"FORMED IRON" MAKES A FINE KITCHEN . . .



AND A LIFETIME LAUNDRY

The modern way to make plumbing ware is to *form* it from a metal that is relatively light in weight yet stronger than the conventional heavier products. It makes for excellent fixtures at moderate cost.

This Formed Iron Plumbing Ware is manufactured from ARMCO Ingot Iron—a time-tested base for gleaming porcelain enamel. . . Sinks, laundry tubs, bathtubs and lavatories of this graceful, practical ware will add the right colorful note to the houses you build. Consider it for that next house, whatever the price. Tell your prospects that these fine modern fixtures are *acid-resisting* at no extra cost. Point out the famous ARMCO label that every piece made of ARMCO Ingot Iron is entitled to carry. Then they'll know that you've installed first-quality fixtures.







HOT-WATER HINT: The newest thing in hot-water tanks is one that's porcelain enameled inside and out on genuine ARMCO Ingot Iron. No more annoying leaks and rusty water. For more details, write to The American Rolling Mill Company, 1451 Curtis Street, Middletown, Ohio.

ARMCO INGOT IRON
A NAME KNOWN TO MILLIONS



33 YEARS

Advertising in AMERICAN BUILDER BRINGS SUCCESS

Back in 1907 when a prosperous builder sat in a smart, red-plush  like this, folks still hurried to the  to see an  go by, or stood on the curb and yelled, "Get a ." Coal was delivered to homes from a . Basement windows frequently looked like this . In 1907 the Majestic Furnace & Foundry Co. (Now

The Majestic Company), of Huntington, Indiana, began telling AMERICAN BUILDER readers

that homes would look better with a Majestic Coal Chute like this. See advertisement



In the



of progress since that time, the



have dropped almost completely out of the



business, but Majestic Coal Chutes

have kept pace with numerous improve-

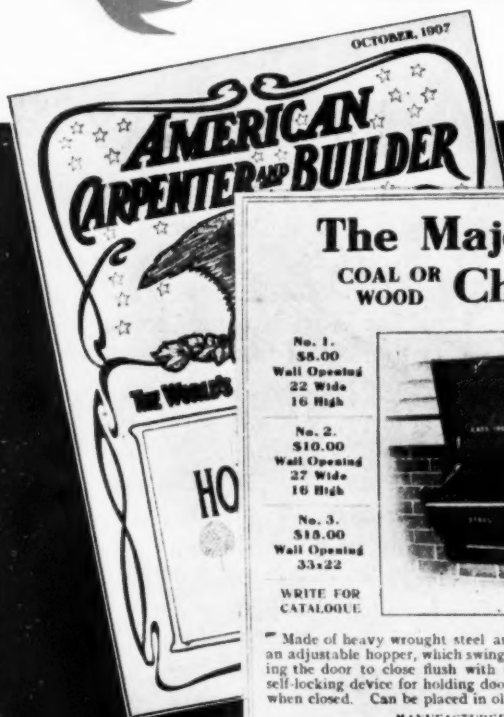
ments, and advertising of Majestic Products

in AMERICAN BUILDER has continued

year-after-year.

During intervening decades many new items have been added to the Majestic Line. New products have been introduced. Old lines have been broadened. Today The Majestic Company manufactures a virtually complete line of metal building necessities—so many that only part of them can be shown in the ads of today.

Majestic's progress has been no accident, for through these years the company stuck to its original strict policy of emphasizing quality first in every item produced, and has advertised these



The Majestic COAL OR WOOD Chute

No. 1.
\$8.00
Wall Opening
22 Wide
16 High

No. 2.
\$10.00
Wall Opening
27 Wide
16 High

No. 3.
\$15.00
Wall Opening
33x22

WRITE FOR
CATALOGUE



Made of heavy wrought steel and cast iron, and has an adjustable hopper, which swings into the chute, allowing the door to close flush with the wall. Also has a self-locking device for holding door open and for locking when closed. Can be placed in old walls as well as new.

MANUFACTURED BY
MAJESTIC FURNACE & FOUNDRY CO.
HUNTINGTON, IND.

Successors to THE CHAPPELL FURNACE CO.,
Moreno, Mich.

IF YOU WANT TO SELL THE BUILDING FIELD

AMERICAN BUILDER

Majestic Success!

products to AMERICAN BUILDER readers regularly and effectively.

Success of many other consistent AMERICAN BUILDER advertisers is no accident either, because this publication holds sustained interest of the most important buying audience in the building industry. AMERICAN BUILDER readers include thousands of active building men and the dealers from whom they buy. Each year they make actual purchases of materials and equipment for thousands of residential and light-load-bearing projects. AMERICAN BUILDER is the only publication that successfully serves both buying and distributing factors in the building field, providing a complete marketing service for manufacturers of building products.

AMERICAN BUILDER advertisers are successful because the publication itself is consistently successful. For many years AMERICAN BUILDER has maintained its position of leadership by serving the building industry in various roles; as a nation-wide spokesman, as a dependable textbook for beginners, as an idea-manual and reference book for active building men, and as a comprehensive buyers' guide.

AMERICAN BUILDER'S consistent success is the result of sound publishing principles consistently applied. Its editors know and deliver what active building men need and want. As a result, AMERICAN BUILDER is generally accepted throughout the industry as *the* magazine for active building men. This long-standing acceptance is of actual value to AMERICAN BUILDER advertisers, for it assures an attentive, responsive audience for their advertising messages—an audience with **buying power**.

AMERICAN BUILDER

AND BUILDING AGE

A Simmons-Boardman Publication

CHICAGO, ILL.
105 W. Adams St.

NEW YORK CITY
30 Church St.



Majestic

BUILDING PRODUCTS FOR THE MODERN HOME

MISCELLANEOUS NECESSITIES

Majestic manufactures a wide assortment of high-quality castings and other metal building necessities. Such items as Access Doors, Ash Pit Doors, Ash Dumps, Fire Shields, Patch Collars, Pipes, Gases, Rings and Covers, Black Type Cases, Hot Water, Venting, Foundation Grates, Bell Taps, Cranks and Drives, The Strainers. For these items call Majestic.

Majestic Great Basement Lock combines automatic ventilation, weather-tightness and other convenience features with durability.

25 years of leadership makes "Majestic" synonymous with quality and service.

A quality chime (at left) fitted with solid glass panels. Glass panels are set in rubber and protected by a steel plate that drops into place automatically when chime is opened. Chime lock can be operated by convenient push button. Heavy steel covered with enameled paint.

Majestic "Special" Chime (at right) has extra heavy rubber seal frame, electrically welded covers, sturdy hinges, automatic lock, push button and heavy ground steel door. Finished with enameled paint. A real buy in low-cost chimes.

Majestic Grade Lock Chime (at left) put the exterior opening on the grade line. Built for hard service. Special door hinge makes this chime practically weather-tight. Heavy latch operates with ease and push button. Body made from reinforced steel and rubber. Finished in rust resisting enameled paint.

COAL CHUTES

A quality chime (at left) fitted with solid glass panels. Glass panels are set in rubber and protected by a steel plate that drops into place automatically when chime is opened. Chime lock can be operated by convenient push button. Heavy steel covered with enameled paint.

SPRING PROGRESS

With A

INCINERATORS

Majestic Incinerators offer the latest in modern, built-in, safe and convenient way to dispose of garbage and rubbish. Offered in three sizes for use in garages, attics or in the house. Does not interfere with heating plant. Built-in, attractive and built to last for years. Piped only when desired. No extra cost. Only incinerator with removal necessary. Surprisingly low in cost.

Model No. 30 (at left) requires no fuel other than the combustible rubbish that the average household places in it when filling. Piped only when desired. Burns wet and dry garbage. Cleans out and disposes of 3 bushels capacity. Low cost. Will remove fuel.

One find model (at right) for those who prefer this type. Cleans out and disposes of 3 bushels capacity. Piped only when desired. Burns wet and dry garbage. Cleans out and disposes of 3 bushels capacity. Low cost. Will remove fuel.

WIRE AND PACKAGE RECEIVERS

Majestic "De-Lux" Package Receiver is a heavy construction and beautifully designed. Interior door, when open, forms convenient shelf. Fully insulated. Automatically locks for security door.

Package deliveries can be safely made inside the house with Majestic Receiver. No trucking in dirt—no unsightly messes—no danger of theft. After delivery is made, outside door automatically locks. Pull in 6 inches, locks and cold rubber seal gaskets deliver. Homeowners with any house. Automatically piped.

Model "P" (at right) is a low cost, fully insulated double door with easily installed adjustable body. Door opens. Automatically locks. Attractively finished.

FIREPLACE ACCESSORIES

Majestic also offers a selection of grates for stoves and fireplaces, fireplace screens, fireplace mantels, and various accessories. Show a Majestic's improves controlled draft heater grate. Door or bottom, regulates fire heat for circulation. Regulate heat and saves fuel.

KITCHEN VENTILATING FAN

A low cost efficient ventilating fan. Keeps kitchen, dining, and other rooms fresh and clean air out of the house. A modern necessity.

The Majestic Fan has a four bladed, 10 inch fan and a quiet operating, waterproof G. I. motor (A.C. current). Fan and motor can be quickly removed and washed under faucet. Attractive grille is finished in white enamel. Located, weatherproof outside door opens or closes automatically when motor is turned on or off by inside push button. Square body is adjustable to various wall thicknesses. Easily installed in any wall. A true Majestic value.

UNDERGROUND GARAGE RECEIVERS

A Majestic underground Garage Receiver "harries" the parking problem. It is completely hidden in the ground except for the cover. A tight fitting, fast opening lid prevents water seeping in and eliminates other unsightly, unsightly features of other receivers. Garage will last for most or more.

BUILT-IN TYPE RECEIVER

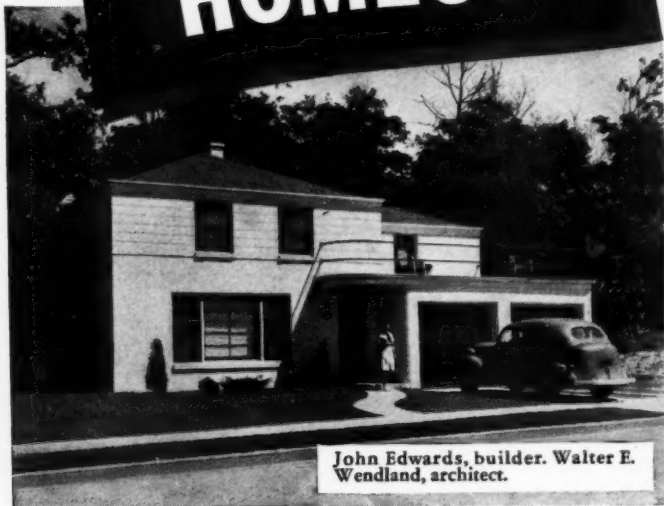
There's a Majestic model for every budget. The "Quality" and low cost model built into top guaranteed against breakage or rust for 10 years. Other parts equally well constructed. Low expensive offer reliable service and complete satisfaction. Sizes from 8 to 15 ft.

Built-in type especially suited for apartments. Can be placed in space inside kitchen or on porch. Heavy constructed steel with cast steel door and frame. Sizes from 8 to 15 ft.

Send For Copy of Complete Catalog.
THE MAJESTIC COMPANY
713 E. 10th St.
HUNTINGTON INDIANA

AMERICAN BUILDER READERS FIRST

Does the public go for CONCRETE HOMES?



John Edwards, builder. Walter E. Wendland, architect.

Look at the record of builders in Milwaukee!

55 different builders built a total of 117 concrete houses in 1939—using concrete as a sales feature or in response to the owner's demand.

275 concrete homes have been built in Milwaukee, city and county, in 3 years!

Gives Your Homes New Eye Appeal!

The wide choice of textures and patterns available with concrete masonry and reinforced concrete, steps up the sales appeal of your homes by giving them added distinction and variety.

Better Value, Too!

Firesafe, resistant to termites and dampness, comfortable in any weather, concrete construction gives buyers the satisfaction that only homes with all these qualities can deliver.

Concrete construction makes little or no difference in the price tag, but it does deliver *better value* with low upkeep, higher resale value.

Build a concrete demonstration home now and learn for yourself why 45,000 home-buying families have chosen concrete the past 4 years. Write us for helpful literature.

PORTLAND CEMENT ASSOCIATION

Dept. 5-3, 33 W. Grand Ave., Chicago, Ill.

A national organization to improve and extend the uses of concrete... through scientific research and engineering field work

Power Equipment

(Continued from page 67)

The cutting operation goes very fast as the operator acquires experience with the standard units. A typical job was the cutting of 68 rafters, including the plumb cut and plate cut, in 45 minutes. "Of course," the saw operator remarked with a grin, "you have to get them laid out right."

Equipment Gets Results

Wherever possible, the Campagna jobs are speeded by up-to-date equipment. One illustration is an electric pipe cutter which has been very effective in reducing plumbing costs. Concrete is delivered by ready-mix trucks. A powerful tractor with earth mover is used for grading purposes, and efficient dump trucks handle large quantities of fill and top soil. Equipment used by the Campagnas includes two DeWalt table-type woodworkers, four Skilsaw electric hand saws, one Stanley electric mortiser, one Oster-Williams Tom Thumb pipe cutter, a Caterpillar B2 tractor with earth mover, several dump and light delivery trucks.

Construction operations at Campagna's Glen Park development were thoroughly organized on a piece-work basis for each crew. For example, the framing work, including walls, ceilings, joists and rafters is done by five mechanics and two helpers. At first it took this crew two days to frame a house. Later the time was reduced to 7½ hours. As a result of this increased efficiency the men earned higher wages and the company achieved a lower cost and less wasted time. The lump sum of \$43 paid for the framing operation is split among the crew so that the mechanics earn around \$7 a day and the helpers \$4.

Footings are built by a crew of two mason helpers who get the forms in shape for ready-mixed concrete on a typical 25 by 40 house in one day. This operation costs \$10.

A typical 8-inch concrete block foundation (no basement) is done by two masons and one helper in a day, for which \$17 is paid.

Wall and roof sheathing for a house is installed by one mechanic and two helpers in a day, using electric hand saws. The lump sum for this operation is \$16.

Exterior windows and door frames for one house are installed by one mechanic and a helper in one day.

Exterior siding with metal corners (no mitres) is applied by two mechanics and one helper in one and a half days.

Locks are installed in one house by one man in a day, using an electric butt mortiser.

A crew of four men install interior trim in one house in a day.

Rocklath plaster base and metal corner beads are installed on interior walls by three mechanics and one helper in a day.

Sheetrock ceilings are installed by two mechanics and a helper in one day. An additional mechanic fills the joints.

Three mechanics and two helpers apply scratch and brown coats.

Four mechanics and one helper apply the white coat in one day.

Asphalt roof shingles are installed on one house by two mechanics and a helper in one day.

From the above it becomes apparent that most of the operations of building these small houses have been broken down into an average day's work, for which the average mechanic earns from \$6 to \$8 and the helper \$4 to \$5. When a crew is able to finish their job in less than an eight-hour day they can knock off work and go home, or if the foreman of a crew finds that they can get along with one less helper and still get the job done in a day, a large part of the amount so saved is distributed among the rest of the crew.

By standardizing the plan of the houses the crew soon becomes familiar with the operations on which they specialize. The result is that their speed and efficiency increase sharply as the job progresses.

The result of the use of the power equipment and efficiency methods described is a low-priced house within reach of the mass market. While the average worker in this area has been paying \$40 a month rent for minimum accommodations he is able to buy these 4½ to 5½-room houses for as little as \$25.16, including interest, amortization, taxes and insurance. Because of these low monthly carrying charges, the builders have no difficulty at all in finding buyers—in fact, when the last of the 124 lots available in the first three developments were sold they still had a waiting list of 150 prospective buyers. As a result, steady jobs have been created for a large number of building workers.

The Steel Square

(Continued from page 75)

marked 3, 4, 5, 6, etc., up to 12 illustrate how the above described process of moving the square along the length of the rafter may be repeated in the same way time after time. The figures given in Fig. 5 show that each time the square is moved along to the right it has been moved a distance of 15 inches along the length of the rafter and at the same time a distance of twelve inches or one foot in the direction of the "run" of the rafter parallel to the line of the tops of the wall plates. Therefore, if the square is placed on the stock as described above just as many times as there are feet in the run of the rafter (in this case 12 times) and when it is in the 12th position, a line is drawn or scratched along the outside edge of the tongue, then this line will be the center line of the ridge board against which the rafter is to rest or, in other words, it is a plumb line which would pass through the center of the span of the roof if the plumb line were extended down to the level of the tops of the wall plates. The point in which this line cuts the measuring line (marked 0 in the Fig. 5) is the point of intersection between the measuring line and the center line of the ridge and the distance from point 0 to point P will be the "length" of the rafter, taken along the measuring line.

Thus, the length of the rafter is found according to this method by moving the steel square along the rafter, laying it on the rafter in different positions just as many times as there are feet in the run of the rafter, or half as many times as there are feet in the width of the building out to out of wall plates. This method of finding the rafter length does not require the use of any arithmetic but unless great care is taken with the first step and all subsequent steps, it will lead to inaccurate results because any mistake would be magnified many times. It is important that the rafters should be just the right length because, if they are not, the framework will not fit tightly together and therefore will not be securely braced.

Allowance for Ridge Board

When the square is in the position shown at the extreme right hand end of Fig. 5, a line drawn along the outside edge of the tongue marks the center line of the ridge or the center of the span of the roof and if the rafter were to be cut along this line, it would be of the correct length to fit properly into the roof frame if the rafters on each side of the ridge line were intended to bear directly against each other without the use of a ridge board as is sometimes, but not often, done. However, in most cases there is a ridge board extending the full length of the roof frame and the upper end of the rafters must all rest against the side of this ridge board as is shown in Fig. 6. In this case, if the rafter was cut as described

(Continued to page 98)

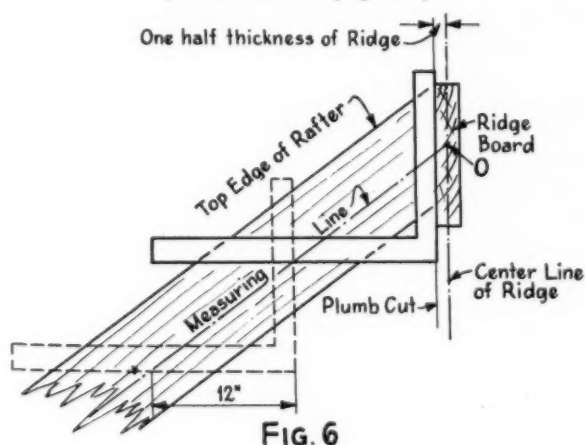


FIG. 6

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The Steel Square

(Continued from page 97)

above, it would be too long to allow for the thickness of the board or plank which forms the ridge board, so it is necessary to move the square back, that is, away from the center line of the ridge, far enough so that a line drawn along the outside edge of the tongue will represent the intersection of the end of the rafter, with the side of the ridge board instead of with the center line of ridge. As shown in Fig. 6, this means that the square must be moved in a direction at right angles to the center line of the ridge a distance equal to one half of the thickness of the ridge board, but in order that this line may be parallel to the center line of the ridge, as it must be, the square must be kept constantly in the same relative position with respect to the Measuring Line as it occupies when it is in position 12 in Fig. 5. If the fence is kept constantly in close contact with the dressed top edge of the rafter while the square is being moved back, the new line will be parallel to the center line of the ridge and if a distance equal to half the thickness of the ridge board is measured off at right angles to the center line and a mark is made on the side of the rafter, then the square can be moved back until the outside edge of the tongue passes through this mark and the "plumb cut" can then be made along the outside edge of the tongue. This plumb cut will be made at right angles to the sides of the rafter because the common rafters are all at right angles to the ridge board.

Making the Seat Cut

The cut which must be made at the bottom of a rafter to make it fit over the wall plate is called the "Seat Cut" or the "Heel Cut." Fig. 7 shows how to handle the steel square in order to make the seat cut. The square should be placed on the side of the rafter so that the 12-inch mark on the outside edge of the blade or body will rest on the point P which represents the intersection of the side of the rafter with the upper outside corner of the wall plate. At the same time the inch mark on the outside edge of the tongue of the square which corresponds to the rise-per-foot-run of the roof must rest on the Measuring Line as shown at the extreme left hand end of Fig. 5 and Fig. 7. With the square in this position a line drawn or scratched on the side of the rafter along the outside edge of the blade or body from point P to the lower edge of the rafter will mark the seat cut for the rafter. If a cut is made on this line square with the side of the rafter, a seat will be formed which will rest snugly on the top surface of the wall plate as illustrated in Figs. 5 and 7. A "tail" on the rafter is shown in both figures to project beyond the outside of the wall plate to form the eaves of the roof.

Laying Out Rafters with Back Towards the Workman

Figures 5 and 7 show how a rafter may be laid out and cut with the steel square when it is lying with the top edge or "back" of the rafter away from the workman. Many carpenters find it better to lay out the rafters with the top edge or "back" toward them and to illustrate how this can be done, Fig. 8 is presented. Here the top edge or "back" of the rafter is the edge nearest to the reader and the heel of the square in its different positions is pointing away from him. A careful study of this figure (Fig. 8) will reveal that it is just the same as Fig. 7 would be if it were turned upside down and put in a horizontal position. Therefore, the same methods apply in this case as in the other, but with the square reversed.

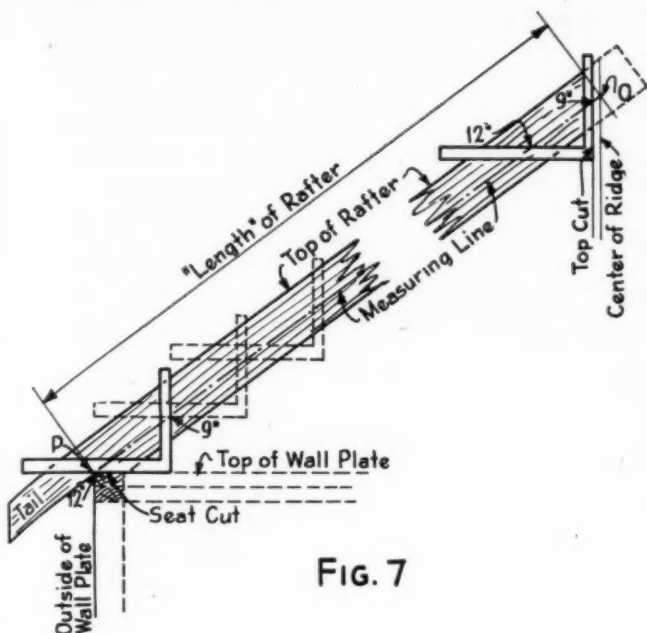


FIG. 7

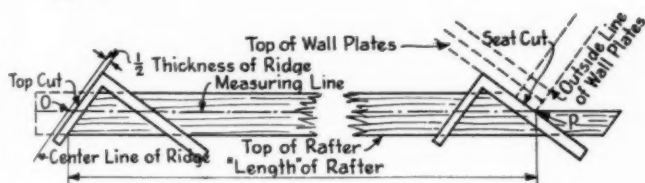


FIG. 8

Back of Rafter Used as the Measuring Line

In all the preceding explanations the work has been laid out using the "Measuring Line" as a guide for the placing of the steel square both in connection with finding the length of a common rafter and in the work of laying out the seat cut and the plumb cut, often called the "heel cut" and the "top cut." In the case where there are no projecting eaves and where, therefore, there is no "tail" on the rafters, the point P in Fig. 7 (the outside upper corner of the wall plate) will come on the line of the top edge of the rafter itself and this line of the top edge or the "back" of the rafter, will itself become the measuring line. Point O, also in Fig. 7 at the ridge of the roof will, in this case, come on the line of the top edge of the rafter. Many carpenters prefer to work with the line of the top edge or back of the rafter instead of with a measuring line and it can be done even when the roof has projecting eaves necessitating a "tail" on the rafter.

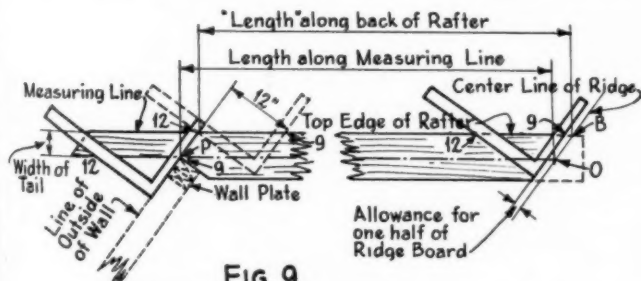
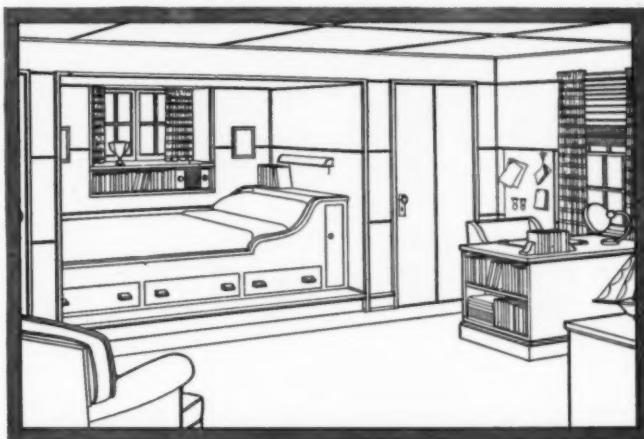


FIG. 9

To accomplish this, however, a little preliminary work with the square must be done at the end of the rafter, which rests on the wall plate. It is necessary to locate the point (marked "A" at the left hand end of Fig. 9) in which the line of the outside of the building wall would intersect the line of the top edge of the rafter. To locate this point it is first of all necessary to fix the location of the point P, in Fig. 9, in which the horizontal line of the outside upper edge of the wall plate is assumed to inter-

(Continued to page 100)

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The Steel Square

(Continued from page 99)

sect the side of the rafter when the rafter is cut over the plate so as to rest on it. This point must be located far enough down from the top edge of the rafter to provide the proper width for the tail of the rafter and far enough back from the extreme end of the rafter (the extreme left hand end in Fig. 9) to allow for the proper projection of the eaves over the outside wall line. These two measurements are determined either from the architect's drawings, or if drawings are not available, then by the judgment of the craftsman.

After the point P (Fig. 9) has been located, the point A can be fixed by placing the steel square on the side of the rafter in such a position that the figure on the outside edge of the tongue corresponding to the *rise-per-foot-run* of the roof (9 in this case) is on point P, and then moving the square around this point until the 12-inch mark on the outside edge of the blade rests on the measuring line, while the 9-inch mark on the outside edge of the tongue still rests on the point P, as shown in Fig. 9. Then a line drawn along the outside edge of the tongue of the square will be the line of the outside of the wall plate, and the point in which this line intersects the line of the top edge of the rafter will be the point A.

After the point A has been located, the length of the rafter can be laid off along the "back" of the rafter, either from the rafter tables or by means of the method shown in Fig. 5. In this way point B can be located representing the intersection of the center line of the ridge with the line of the top edge of the rafter.

If the method illustrated in Fig. 5 is followed, the square in its final position at the upper end of the rafter will be as shown at the extreme right end of Fig. 9, with the 9-inch mark on the outside edge of the tongue far enough back from the point B to allow for one half the thickness of the ridge board and the 12-inch mark on the outside edge of the blade on the line of the top edge or "back" of the rafter. If the length of the rafter per foot run is taken from the rafter tables and multiplied by the number of feet in the run of the roof, and if this distance is then measured off from point A along the back of the rafter to locate the point B, then the square can be placed in the position described above and shown at the extreme right hand end of Fig. 9, so that a line drawn along the outside edge of the tongue will indicate the position of the *side* of the ridge board. This line will be parallel to the line of the outside of the wall as shown at the extreme left hand end of Fig. 9, and therefore the distance A-B corresponding to the length of the rafter measured along the "back" will be the same as the distance P-O corresponding to the length of the rafter measured along the measuring line.

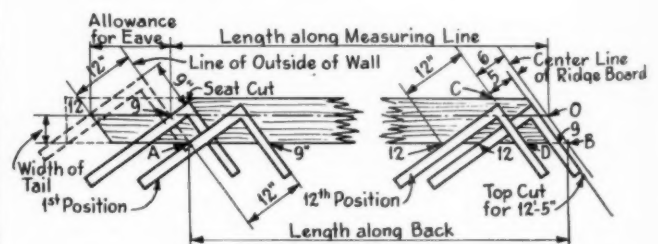


FIG. 10

Fig. 10 shows at the left hand end of the figure the position of the square on the point P in order to locate the point A when the rafter is laid down flat with the top edge or back *towards* the workman, when the rise-per-foot-run of the roof is nine inches per foot. It shows the position in which the square would be placed under

these circumstances, in order to mark off the heel cut or the seat cut and it shows the square placed on the point A in the first position as required in order to start the process shown in Fig. 5 for finding the proper length of the rafter when the run of the roof in feet is known, but no rafter tables are available.

How to Find Length of Rafter When Run Is Not an Even Number of Feet

In Fig. 10 let us assume that the span of the roof is 25 feet out to out of walls, so that the run of the common rafters is 12 feet and six inches. If rafter tables are available, we must multiply the figure given in the tables for the length-per-foot-run by $12\frac{1}{2}$ to get the "length" of the common rafter, but if there are no rafter tables handy, the method set forth in Fig. 5 must be followed with the square placed on point A as indicated in Fig. 10 and marked (1st position) as the starting point. The square will then be shoved along to the right progressively eleven times, as described in connection with Fig. 5, but using the "back" of the rafter instead of the measuring line, until the square is in the position marked 12th position in Fig. 10. The square has now been advanced in the direction of the *run* of the rafter a distance of 12 feet and it is necessary to advance it in this direction a further distance of 6 inches to correspond to the run of twelve feet six inches. When the square is in the 12th position as shown in Fig. 10, make a mark with a pencil or scratch-awl along the outside edge of the tongue marked C-D in the figure. Now, keeping the 12-inch mark on the blade and the 9-inch mark on the tongue always on the dressed top edge or back of the rafter, (which in this case is *towards* the worker), move the square forward (to the right in the figure) until the 5-inch mark on the outside edge of the blade or body comes directly over the mark which has just been made along the edge of the tongue (line c-d). This is the same as moving the square 5 inches further along in the *direction of the run of the rafter*, and a line drawn on the side of the rafter along the outside edge of the tongue of the square in this position will be the line of the top cut for a run of twelve feet six inches allowing one inch for half the thickness of the ridge board.

Similarly, if the span of the roof were 22 feet and 10 inches, out to out of wall plates, the run of the rafters would be eleven feet and five inches and after applying the square to the rafter at point A, Fig. 10, as shown and moving it along ten times to the eleventh position, it should be moved along again until the four-inch mark on the outside edge of the blade or body is on the line previously drawn or scratched on the side of the rafter along the outside edge of the tongue when it was in the eleventh position. This will give the position of the top cut with allowance for the ridge board. The same method can be followed to find the length from the outside line of wall to center line of ridge for a rafter whose run is any other number of feet and odd inches.

In order to allow for the thickness of the ridge board, one half of this thickness (say one inch for a two inch thick ridge board) must be subtracted from the odd number of inches through which the square is moved in the last movement described above. Thus, as shown in Fig. 10, instead of moving the square forward six inches it would be moved forward five inches and the line drawn on the side of the rafter along the outside edge of the tongue of the square will be the plumb cut corresponding to the intersection of the top end of the rafter with the side of the ridge board.

The next article of this series on the steel square will explain methods for using the square in laying out hip rafters.

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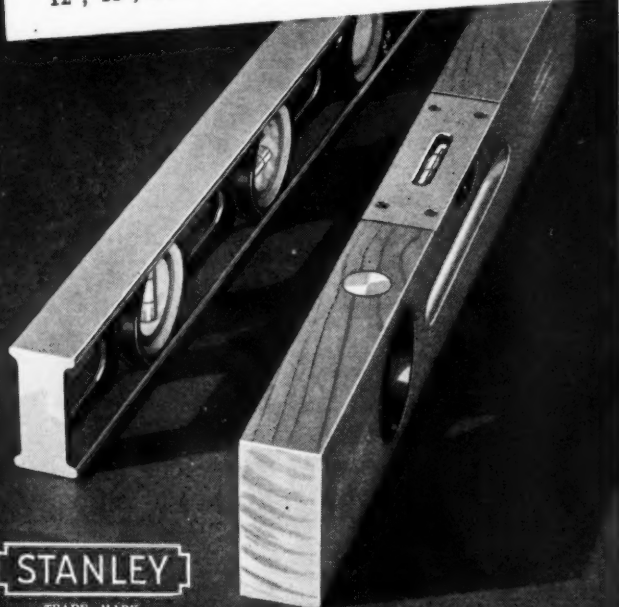
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(Continued from page 71)

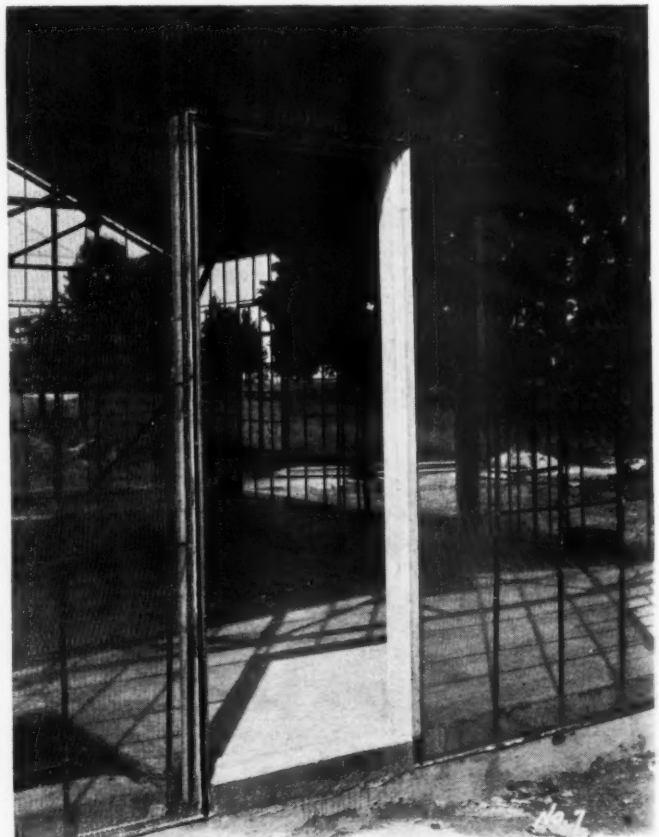
Here of late, this system has received considerable attention in connection with modest homes, not only economical in upkeep and maintenance but also low in first cost.

Only standard building materials, readily obtainable through established outlets, are used. Although quantities of the commoner materials vary widely from those required in long-established methods of building, all materials are conventionally applied, no special technique being required. The necessary building equipment and tools likewise are those in common use.

Costs of the construction are comparable to those of brick veneer. However, the possibilities of special savings are such that the construction promises, in some cases, to rival in cost good frame construction.



ABOVE, roof bracing and construction, concrete stucco and insulation in the E. R. Haack home, Sheboygan. BELOW, detail of framed door opening and side wall construction.



This system of construction employs a skeleton frame of standard structural steel sections, so light that they are easily walked into position. The frame can be bolted, riveted or welded together. Foundation requirements are the same as for frame construction, rather than heavier ones required for brick veneer and solid masonry.

In the outer walls, $\frac{3}{4}$ -inch steel plastering channels are used for studs, their tops clipped to the structural frame and their lower ends attached to dowels in the foundation. Alternate studs are doubled for greater strength, and two courses of horizontal channels are used for additional stiffening. This light framework is covered with galvanized metal lath, securely wire tied. Steel casement windows are preferable but wooden frames for weighted windows also can be used.

Three coats of portland cement mortar applied to the outer surface and a heavy coat to the inner surface completely imbed the metal lath and form an intensively reinforced slab two inches thick. Ribs, formed by applying the back plaster heavily over the steel channels, coffer the back side of the wall slab.

Recent laboratory tests show that such a wall slab has remarkable bearing strength, suggesting the possibility of eliminating much, if not all, of the structural steel. However, the structural steel frame represents little more than seven per cent of the cost of the house, and its use greatly facilitates construction. Consequently, eliminating the structural steel might not bring about much saving in ultimate cost.

Several types of fireproof floor construction are available. There are special advantages in using expanded steel joists, supporting a $2\frac{1}{2}$ -inch slab of concrete over $\frac{3}{4}$ -inch rib metal lath. When such floor construction is used, and the basement ceiling is finished with plaster on metal lath, ducts for forced air heating can be constructed between the floor and the ceiling without sheet metal. This construction also is ideal for experimenting with radiant heating, which promises further savings in home equipment, lower maintenance and greater usability of floor space.

In low-cost houses the floor slabs are troweled smooth and the room areas are covered with heavy linoleum. However, rubber tile or block flooring can be laid in mastic over the concrete slab, or sleepers can be imbedded for nailed-on flooring.

For the room plastering of the outer walls a separate construction of metal lath and steel channels is used, braced only at infrequent intervals to the outer wall slab. The unobstructed space between the wall slab and the room plastering facilitates the installation of wiring and other service lines. Most any type of wall insulation can be used.

The ceilings are of suspended metal lath construction, and are easily insulated. Practically all of the room separations in low-cost houses are 2-inch solid partitions of plaster and metal lath, with metal door bucks and trim. In more pretentious residences, hollow metal lath partitions are used for the principal room separations, with any desired trim.

This type of construction is specially suitable for flat-roof residences. However, little difficulty is encountered in constructing a gabled roof, using a $2\frac{1}{2}$ -inch roof slab of concrete over ribbed metal lath supported by steel purlins. An economical covering for a gabled roof is rolled roofing patterned to simulate nailed-on shingles. This is applied down the roof instead of crosswise, and is laid in a mastic. When nailed-on shingles are to be used, a surface of cindercrete or similar material is added to the roof slab to provide the necessary nailing surface. While this increases the cost, it has some insulating value.

* * *

English Town Houses

(Continued from page 90)

known Long Island residential architect. Sixty-four of the dwellings have been completed to date and construction is now under way on the next group of 64. A total of about 400 homes are planned for the property, which is part of the former Queens Valley Golf Course, a highland location overlooking the Kew Gardens end of the 1,000-acre Flushing Meadow Park and the World's Fair grounds. These houses are being sold in the \$6,000 price class, beginning at \$5,990. FHA 25-year mortgages have been arranged with the Ridgewood Savings Bank.

EXTERIOR FEATURES INCLUDE: 35 ft. set-back from curb; all exterior walls of genuine Sayre & Fisher brick and

(Continued to page 104)



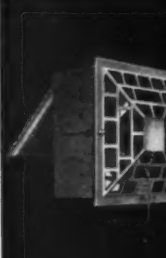
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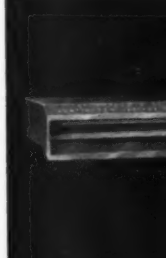
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Majestic Kitchen Ventilating Fan. Four 10" blades. Waterproof G. E. Motor. Square body is easily adjusted to various wall thicknesses. Insulated outside door opens or closes automatically when motor is controlled by inside pull chain. Inside grille furnished in white enamel.



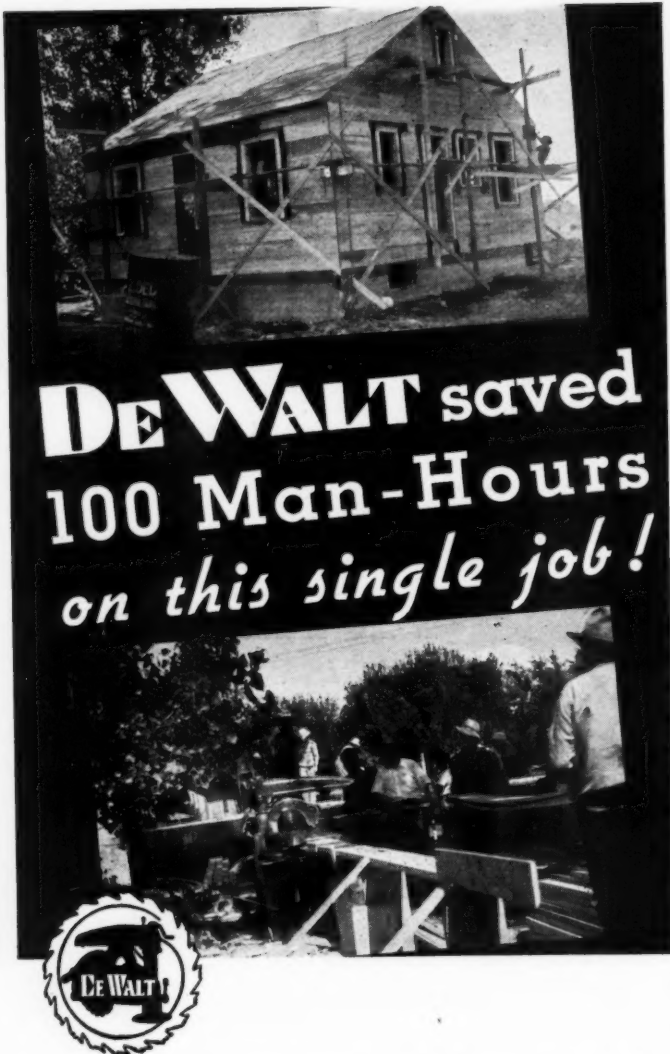
Majestic Outdoor Fireplace Unit. Ready to build into any design of fireplace. Welded angle construction with cast semi-steel doors and grates. Size: 20" high, 28" long, and 15" wide. Top grate slides out for convenience. Bottom grates adjustable in height for charcoal or wood.



Majestic Ventilating Brick. Provides ventilation for masonry enclosed areas. Cast semi-steel. Louvred and waterdrips at top and bottom. Screened with bronze wire screen. Size 8" x $2\frac{1}{4}$ " x $4\frac{1}{4}$ ". Typical of Majestic's many metal building necessities—designed to save labor and cost.

WRITE FOR CATALOG
The MAJESTIC Company
761 ERIE STREET
HUNTINGTON, INDIANA

MAJESTIC



DE WALT saved
100 Man-Hours
on this single job!

On a foundation, 26' x 24'10", this house in Bricelyn, Minn., was begun at 8:50 A.M., July 30th. Ten minutes earlier, one sawyer and helper started with one DE WALT WOODWORKER to keep the crew busy.

Every piece of lumber used, including joists, studs, headers, rafters, flooring—all framing work was done on this one DE WALT machine. Four days—Friday, Saturday, Monday, Tuesday—and the house had reached the stage pictured above at 6 P.M., August 3rd. The contractor figured he'd saved 100 man-hours on this job.

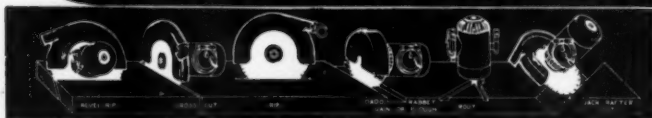
Here's concrete proof of DE WALT efficiency on the job. Any building contractor can quickly make this "all-purpose" builder's saw pay for itself in time, labor and material saved. Don't wait for the next job. . . . Let DE WALT finish your current work ahead of schedule and earn you more money.

**WRITE
FOR FULL
FACTS**

When you write, be sure also to ask about the light-weight GP DE WALT with the handy carrying skids that you can use portably around your job.

DE WALT 432 FOUNTAIN AVE.
LANCASTER, PA., U.S.A.

"Actually a woodworking shop in itself"



NICE treatment of bay window in English Town House living room.

English Town Houses

(Continued from page 103)

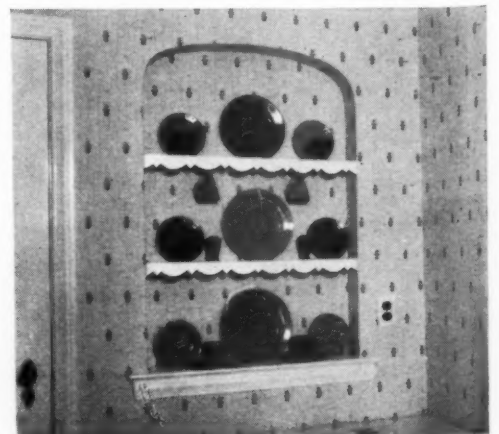
cut stone; landscaped, sodded and shrubbed lawns; concrete drive-ways, sidewalks, curbs; paved winding roads; distinctive details including copper hooded entrances, English type brackets, overhangs, ornamental shutters, stone insets, etc.; large, full peaked roofs; colored slate roof artistically blended.

FIRST FLOOR: English batten and paneled front doors, with electric push button connected to musical chimes; vestibule with cloak closet; French vestibule door; open terrace (10 x 18) with ornamental iron railing; English oak stairway; studio-size steel casement windows with bronze fittings; log-burning fireplace in several models; built-in mirror-backed curio cabinet with glass shelves; radio outlet and built-in aerial; ornamental cove ceiling moulding.

EFFICIENCY KITCHEN: Custom built, baked-on enamel kitchen cabinets; insulated console gas range; latest type kitchen sink with duo strainer; large sanitary tile drainboards; chromium plated combination hot and cold faucet and soap dish; inlaid linoleum flooring over double floor; double-action door to dining room; ample space for breakfast set.

LUXURIOUS BATHROOM: Walls of giant 12 x 6" pastel tiles, first time in popular priced homes; colored fixtures; built-in tub; fully tiled stall shower with chrome frame glass door; built-in clothes hamper; chromium faucets, fittings, bathroom fixtures, etc.; metal medicine cabinet, chrome framed mirror.

CONSTRUCTION AND EQUIPMENT FEATURES: Craw-Fir-Dor garage doors; poured 12" concrete foundations set in steel forms; waterproofed walls and foundations; jack studs for every opening; Rocklath plaster base; protective metal cornerites and cornerbeads; 3-coat plaster work; steel casement windows; extra heavy floor beams; double floors throughout, finished with 3/4" oak; 6 panel English doors; brass plumbing; copper leaders, gutters and flashing; ample double electric outlets; 3-way electric switch with multiple control for upper floor lighting; special lighting fixtures; front and rear door weatherstripped.



WALL niche detail in dining corner of kitchen, English Town House.

How to Introduce a Product

(Continued from page 49)

prospect on the face of my card, thus conveying the idea that I knew him, or that perhaps he was expecting the samples. I find that often even the prospect himself is uncertain in this regard; he may know me, he thinks, or he may have ordered the samples, so he examines the two brick carefully and puts my card in the top right drawer of his desk with a hundred others, remembering perhaps that it was an orange colored card. (All business cards used in this type of introductory selling should be a good live color.)

Some days I had better luck than usual, making fewer personal contacts; and on two or three occasions I was able to cover two routes (of 20 calls each) on the same day.

Before I had completely covered my territory the first time architects and contractors began to show up at the yard and buy brick. The law of averages began to work. This new product was making its own friends and creating its own market.

Contractors who purchased these units for one job continued to use them. Owners began to take an interest. And so the business grew. For each new account we put a large brown envelope in the office file.

Tempted Aside to Chase Job Reports

About this time Mr. Carlsen subscribed for a "Daily Report sheet." This he felt would be a great help to me. I must confess that it looked as though it might be a short cut to more business. So I reluctantly abandoned my own introductory plan and went directly after the man reported to be in the market for brick. Then I learned something. I discovered that the Report Sheet contained much late information, also that some contemplated building operations were far in the future, while others were contingent upon the acceptance of loans. I discovered too that many architects and contractors were loath to use new materials and would deliberately "white lie" themselves out of ordering my material. They would say "the brick are ordered for that job," or "the owner has picked another brick." Others would give me the "run around" by suggesting that I see the architect, who in turn would advise that I see the owner some evening at his home and take my samples along. I was wasting my time; the build-up was lacking. They were not ready to consider my unfamiliar material. I learned that the contractor who had had no experience with Dunbrik and knew nothing about them was not to be sold on the first call. There would be exceptions, of course; but a salesman cannot live on exceptions.

So I returned to my original plan.

On my second trip over the "routes" I am not moving so fast. I am looking for interviews; and call-backs are taking much of my time. Every day architects and contractors phone the yard and ask that I call back and see them. I am spending my time with those who really are interested. The result is more sales. However, I get back to my "routes" whenever possible. I am still leaving each prospective buyer two Dunbrik (other colors of course) and this time my card is attached to an illustrated brochure, and a list of Chicago homes built of our material.

I never call on the owner unless he is building his own home, or when the architect or contractor has requested me to do so.

When the architect suggests that I see his client I lay before him (the client) about six brick, each of a different color, and ask that he choose the color he wants used. I have little trouble with owners. They like the word concrete. And they like to choose. They do not like to be sold.

I know very little about brick. I am learning. But common sense tells me that a brick that will by sheer force of merit make its own friends and create its own market in a hard boiled city built of clay is a good brick. It has quality unquestioned. The manufacturers who make it and the contractors who use it are building solidly for the future. Their business will grow and prosper. And so will mine.

I could recall some thrilling adventures I have had introducing this building material in a new market. Perhaps one or two will suffice. A certain architect employed in the Loop office of a large concern with a big home building program had no time for me and my material. He was very unreasonable and some of the things he said would not

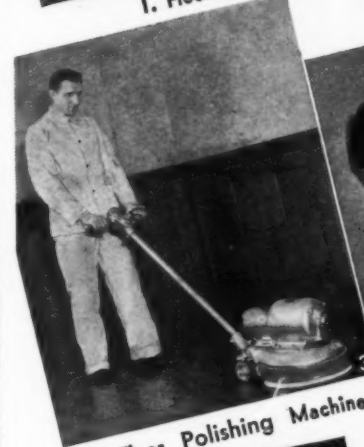
(Continued to page 106)



1. Floor Sander



2. Portable Belt Sander



3. Floor Polishing Machine



4. Floor Edger

Americans

WILL MAKE YOU

MORE MONEY

To make money on the job you must save time and eliminate costly delays that may mean the difference between profit and loss. American floor sanders, polishers, edgers and belt sanders are made with this time-saving feature foremost. By cutting hours off your time and doing the same high quality of work—you naturally put the difference in your own billfold as "profits".

Let us prove the time-saving, money-making features of Americans—send in the coupon for a free, complete description—no obligation. Please indicate whether you are a contractor-builder or wish to go into this profitable floor sanding business for yourself.

THE AMERICAN
FLOOR SURFACING MACHINE COMPANY
511 So. St. Clair Street • Toledo, Ohio

Gentlemen:

Without cost or obligation send complete prices on the following:

- ☐ American Floor Surfacing Machines
☐ American Belt Sanders
☐ American Polishing and Waxing Machines
☐ American Spinner Edger
☐ I want to get into something for myself ☐ I am a Contractor-Builder
☐ I already own one, quote trade-in value

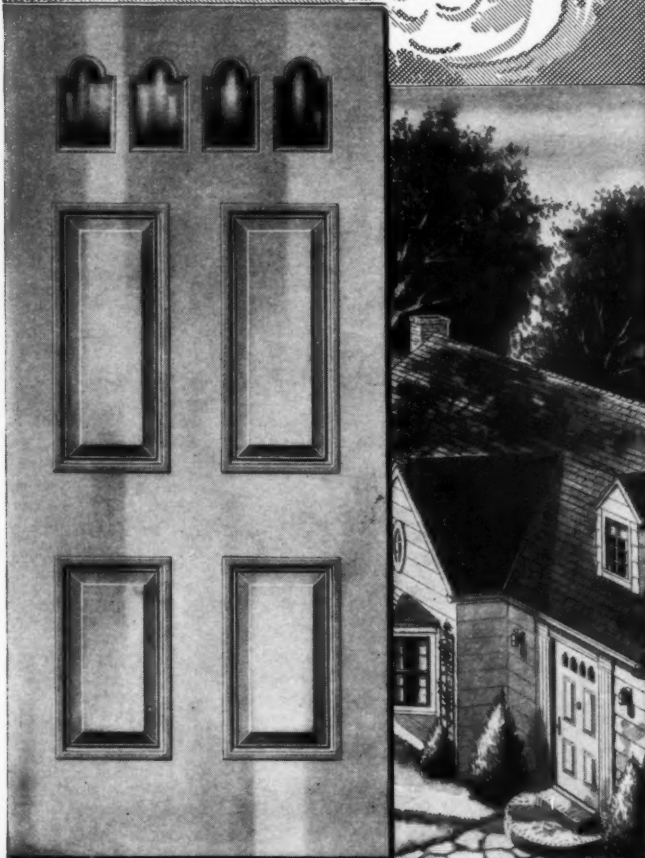
Name _____

Street _____

City _____

State _____

**CUSTOMERS
STAY SATISFIED
WITH...**



TRU-FIT

Durable Douglas Fir Entrance Doors

- DURABLE
- FACTORY-FITTED
- PACKAGED
- SCUFF-STRIPPED
- TRADE-MARKED

You can order all stock Douglas Fir doors pre-fitted at slight extra cost and grade-marked!

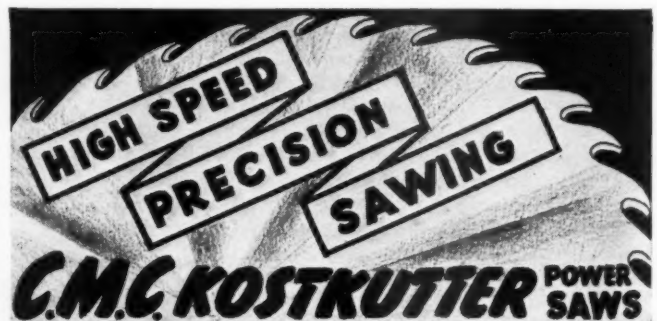
● It's just good common sense to use Tru-Fit Douglas Fir entrance doors in the homes you build. These superior doors come pre-fitted, ready to hang, which saves you time and money. They are individually wrapped and scuff-stripped, which assures you a perfect door every time. Made of old-growth Douglas Fir, the wood that gives years of carefree service... yet they cost no more than other good doors. Among the 27 beautiful designs is one for every house you build. Order from your dealer. Also, write Fir Door Institute, Tacoma Bldg., Tacoma, Washington, for free color catalog if you haven't received a copy.

How to Introduce a Product

(Continued from page 105)

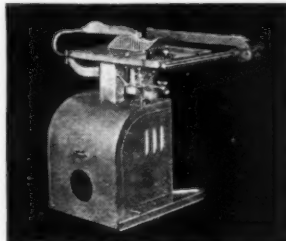
look well in print. So I set out to get that guy. ("Get" is a word often used in Chicago.) I went out to the location where they were building homes and quietly looked the situation over. I visited the jobs under construction and in each case picked up a brick and left a Dunbrik standing beside it in a conspicuous place. Then I went to the sales manager's office two blocks away and had a chat with him. I left four samples on his desk. He, of course, knew nothing of the situation down town. Well, things began to happen, and two days later a new customer insisted that they build his home of Dunbrik. A battle royal ensued between the architect and the rest of the organization. I don't know who fired whom, but the architect is *not with us any more*. Yesterday I called on the same sales manager out on the same location where he tells me they have sold 27 new homes in three weeks. He said, "MacNeill, you don't know what a good job can be done with your brick. Just come with me." We got into his car and drove three blocks to see the fourth such job. It was a great piece of work, beautiful to look at. I heard the mason contractor say, "Mr. Lundgren, I could not duplicate that job with any clay brick I ever used." That sounded mighty good to me.

A certain architect on the north side was making all the plans for a prominent builder. When I called on this architect he had no time for what he called "an imitation brick." He was just too busy to be bothered and walked away. I then called on the builder he was getting his work from and found him willing to be convinced. "But," said he, "my architect specified the brick to be used, and he sits in conferences with my clients. He must be sold if we are to use your product." So I let the matter ride for a few days and pondered over the situation. It so happens that a local real estate paper prints a Daily Report Sheet covering contemplated building operations; and they list the names and addresses of the architect, the contractor and the owner. Well, to make a longer story short, I dropped in on said contractor's client (owners) and left each two samples of Dunbrik, plus my illustrated brochure. I started a small war. Result:

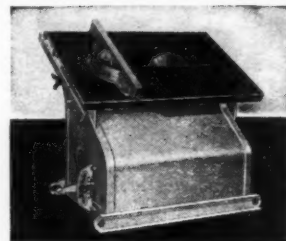


New Saws that "top" them all in speed, accuracy and low price.

CMC Kost Kutters fill a REAL need and BUILDERS are quick to see THEIR MANY improvements.



KOST KUTTER JR. shown left is a little wonder on the job. Has 20" x 27" tilting table—powered with 4 cycle 3.6 H.P. Briggs & Stratton Engine. Plenty of power to cut 3 3/4" stock.



KOST KUTTER SR. at left has no equal for accurate speed sawing. Big 30" x 48" tilt-top table. All steel welded construction. 6 H.P. air-cooled engine or electric motor. Streamlined and saw dust proofed. 14" Saw blades. Takes up to 4" stock. Also the big CMC Power Sawyer saws up to 6" stock with 18" blade.

WRITE for new CMC catalog showing latest in concrete, plaster, mortar and bituminous Mixers, Pumps, Power Saws, Hoists, Carts and Barrows.

CONSTRUCTION MACHINERY COMPANY
WATERLOO, IOWA

the architect is no longer making plans for said builder, and he is using our material. His new "model home" at Arlington Heights built of this material is the source of much new business. Such orders are not hard to take.

Right here let me call your attention to a fact. Up to now I have not made one single attempt to sell Dunbrik as such materials are usually sold. I have simply made it possible for builders to buy. I have not the facilities for selling in the accepted "modern way." I have no stenographer. I haven't the use of a business 'phone. (We have a "nickel" 'phone at the yard.) We put no printed matter in the mail at the company's expense. Mr. Carlsen is Scotch in the matter of little things that would bring large returns. I do have a Model "A" Ford, and "WE" have stirred up all this business. To be perfectly honest with you, I don't know that I could make an intelligent sales talk on concrete brick. I can't recall that I ever have.

* * *

"Housewife Test"

(Continued from page 69)

On this small investment the home owner nets a most substantial saving—one that may run as high as 10 per cent of the total monthly carrying charge of the entire property.

Both houses have identical one-pipe steam heating systems and oil burners which have been adjusted by the same service man. Of further importance is the report of Mrs. Wilson and her family on the comparative comfort of the houses. The uninsulated house, she reported, never felt as comfortable as the fully insulated one occupied by her daughter. This is explained by heating engineers as due to the fact that the warmer walls of the insulated house absorb less body heat. Not only is the house more comfortable and economical in winter, but it will be much more comfortable in summer, it is pointed out.

But discounting comfort entirely, the indicated savings achieved by full wall and ceiling insulation in the Drosch home should prove a powerful sales argument for builders in discussing home heating costs.

A Homelite Portable Generator...



Can Make These Savings Possible

Completely portable—including the built-in gasoline engine that runs it—an 83-pound Homelite Generator gives you electric power any place you want it—1800 watts—enough power for a number of electric tools, saws, drills, tappers, etc.

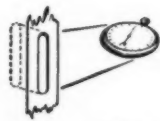
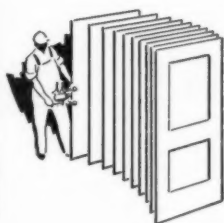


And with such a set-up you can (according to actual experience) rip a 2" plank 12 ft. long in 40 seconds—cross cut ten 3 x 4 studs in 40 seconds—cut limestone sills (4" slab) in 70 seconds—trim a door for hanging in 7 minutes—bevel thirty 2 x 4 rafters 50 degrees in 3½ minutes.

Send for illustrated bulletin

HOMELITE CORPORATION
1905 RIVERDALE AVE., PORT CHESTER, N. Y.

4950 pounds less per day



A Mortise A Minute

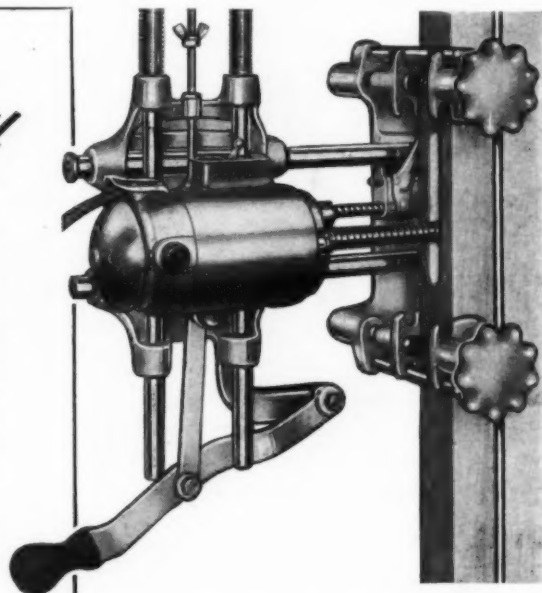
With the proper set-up, a good man can mortise 450 doors a day with this new Carter Lock Mortiser. A mortise a minute is not unusual. To make the job easier, Carter now offers a heat-treated aluminum housing which knocks off 11 pounds from the weight of the former Carter Mortiser.

Figure it out—that means 4950 pounds less per day to lift. Men can work faster with much less effort. It means some nice extra profits for you.

Simple, quick adjustments for setting depth, length and center of cuts. Lock size changeover can be made in 90 seconds.

Full 1 H. P. motor is ball bearing throughout. Speed of 18000 R. P. M. assures smooth cuts. Motor and frame slide on rods through bronze bushings. Uniform feed prevents overloading.

Send coupon right now for facts on this money making tool.



New Carter Lock Mortiser
is fastest, lightest machine
on the market

R. L. CARTER DIVISION

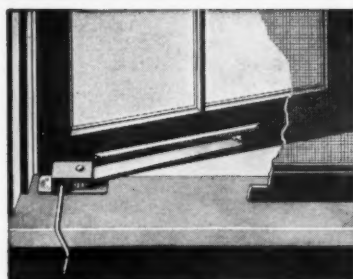
The Stanley Works
133 Elm St., New Britain, Conn.
Please send me complete literature and prices
on the new Carter Lock Mortiser.

Name
Firm
Address
City State

CARTER MONEY MAKING TOOLS

For PERMANENT SMOOTH OPERATION CHOOSE IVES CASEMENT WINDOW OPERATORS

*For only
IVES
operators offer
all of these
features*



- For ADDED STRENGTH, heavier, flanged stock in arm.
- For DURABILITY, arm and half gear wrought in *one* piece.
- For LONGER WEAR, gear teeth are coined.
- For SMOOTH OPERATION, oversize, self-lubricating steel worm.
- To WITHSTAND GREATER STRAIN, deep-drawn housing with double thick sides.
- To ELIMINATE RATTLES, phosphor bronze spring.

Fully illustrated circular C-3
with installation details are
yours for the asking. Sold thru
the Builders Hardware Trade.

Quality Hardware Since 1876

THE H.B. IVES CO. NEW HAVEN, CONN., U.S.A.

18 Sold in Two Days

(Continued from page 45)

installation no heating or sheet metal contractor was required, and the installation was done by Helms' own men. Total cost of the heating plant including installation is less than \$100, he says.

Helms has developed a simplified system of building which he believes is instrumental in getting and keeping costs down. In the first place, all materials are accurately precut in the lumber dealer's shop. The work is done on what is best described as a piece work basis. There are no union restrictions. Helms believes in giving anyone who wants to work an opportunity and has set up a system whereby the more work a man does the more he makes. He has hired handicapped or over-age persons who are desperately glad of a chance to get a job. His electrician, for example, has only one leg—but he and one other man turn out a large volume of work at so much a house. Painting is done with a spray machine operated by an ex-truck driver who is able to apply one coat to two houses a day. Two men shingle a house in a day. Likewise, the plumbing, plastering and all other operations are handled on a piece-work basis which enables the workers to earn from \$5 to \$9 per day, depending on their ability.

"No one has a corner on knowledge," declares Helms in defending his system of hiring all comers. "Most everyone has considerable native ability which can be applied in the building trades. I say, give them a chance. I believe a man on relief should have just as much of a chance at a job as a member of the union."

"We have set up a simplified system where the worker can't go wrong. No job is a big job if it's broken down into small parts. The old timers say, 'it can't be done,'

PERMANENT SPARKLING APPEARANCE!

... THAT'S WHY HOME OWNERS WANT

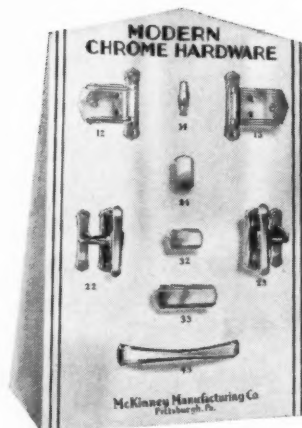
McKINNEY **CHROME-PLATED** HARDWARE FOR KITCHEN AND BATH

PERMANENCE... an important word to builder and prospect alike.

Every home owner wants *permanence* built right into the house to keep maintenance down. Bath and kitchen plumbing fixtures are chrome-plated over brass. Hardware that *matches* offers the same protection against moisture and steam in bathroom and kitchen.

McKinney Chrome-Plated Hardware, eliminates bothersome polishing and costly replacement.

McKinney Chrome-Plated Hardware identifies you as a quality builder who specifies *permanence* everywhere.



McKINNEY MANUFACTURING COMPANY • PITTSBURGH, PA.

75

YEARS OF DESIGNING AND MANUFACTURING GOOD HARDWARE

but we are showing them that it is possible to build and sell low-cost houses, using out-of-job people who are the ones that most need employment."

Specifications of materials used include Johns-Manville asphalt shingles; U. S. Gypsum Rocklath and plaster; B. & B. yellow pine floors; Caloric automatic oil heaters by Caloric Gas & Stove Works, Philadelphia; Anaconda copper tubing.

* * *

Shop-Built Steel Buildings

(Continued from page 65)

treatment, but in most of the buildings the interior surfaces have been finished with two field coats of brushed on enamel and the exterior surfaces with two coats of aluminum paint.

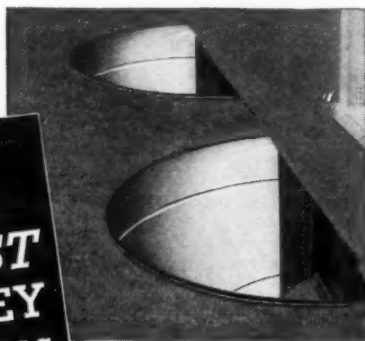
Lockers in the men's rooms are 12" x 18" x 6' with a sloping top to assure ease in dusting and to avoid the possibility of odds and ends accumulating out of sight. Women's lockers are 15" x 18" x 6'. Ample aisle space is provided between locker rows.

Insulating material varied according to the type of structure. Some units have granular material sealed in place. Others have insulating board of various materials incorporated into their basic design, and others make use of paper covered rock wool bats installed as construction advanced. Compressing the bats to fit the 3-inch partition or wall holds them in place when the inner surface plates are attached. In every case sound deadening and thermal insulation was satisfactory.

Flat roofs are used on all buildings, ceilings being approximately 11 feet above the floor level to assure good ventilation. Roof decks were pre-fabricated, using flat

(Continued to page 110)

**50%
LESS COST
WITH DONLEY
STEEL AREA WALLS**



Users report costs are only 50% of normal built, low-priced Donley Steel Area Walls, that require a minimum of installation time.

Made of 16 ga. steel, flanged, ribbed and arch shaped for strength. Either of copper alloy steel with two coats of high grade paint (aluminum second coat), or of special enameling steel, porcelain enameled with a second coat of gleaming white on the window side.

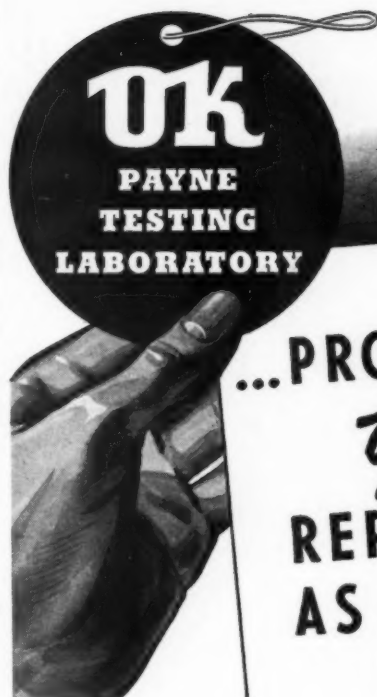
End flanges are perforated for fastening to foundation where desired, but in many installations, earth pressure alone holds Area Wall in place. Smooth, light color reflects maximum sunlight to basement. Made in three standard sizes (see table).

Painted	Porcelain Enameled	Inside Width	Height	For Use With Window Sizes
No. 1	No. 41	38"	17½"	3 light 10 x 12
No. 2	No. 42	38"	23½"	3 light 10 x 16
No. 3	No. 43	44"	23½"	3 light 10 x 20
No. 4		38"	29"	3 light 12 x 18
No. 5		38"	35"	

For further details about the Donley Steel Area Walls, write for free 44 page catalog which also describes many other articles to make homes more convenient and easier to sell.

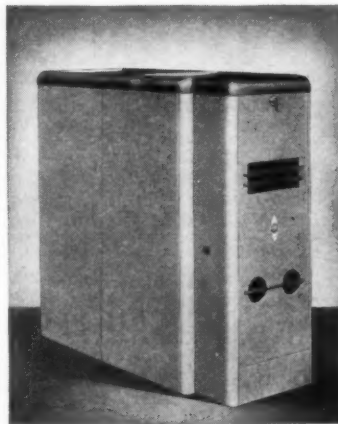


THE DONLEY BROTHERS CO.
13910 MILES AVENUE • CLEVELAND, OHIO



**...PROTECTING
Your
REPUTATION
AS WELL AS
OURS!**

When you specify *Payneheat*, you provide the homeowner with double-tested, double-proved gas fired equipment! ☆ First of all, A.G.A. approved, *of course*. But even these rigid standards of design, safety, and performance are far exceeded in *Payne's* own "Proving Ground". ☆ Here, highly trained technicians conduct relentless tests to prove the efficiency of *Payne* engineering — your guarantee of delivering your client the best heating equipment the industry can offer.



The *Payne* ZONEAIR Unit offers year 'round weather control—automatically. Heats, ventilates, circulates, filters, and humidifies. Economical zoned comfort: for one room, a wing, or the whole house—as you wish. See your dealer, or write for information.



A PAYNE-Engineered Gas Appliance for Every Heating Need



Payne

FURNACE & SUPPLY CO., INC.
BEVERLY HILLS • CALIFORNIA

FASTEST SELLING OVERHEAD TYPE GARAGE DOOR IN U.S. THE CRAW-FIR-DOR

is priced **\$28**
at only...

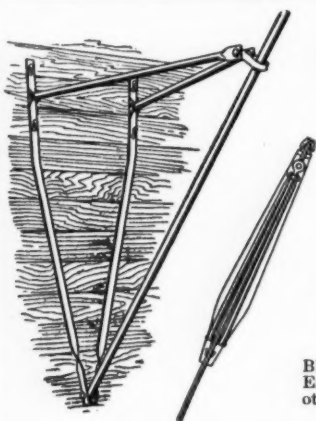
RETAIL PRICE ANY
U. S. JOBBING CENTER

Equipped with cylinder lock at no extra
cost • Door is durable Douglas Fir • Extra
strength hardware • Pre-fitted to 8' x 7'
opening • 3 beautiful designs.

If your distributor can't supply you, write Fir Door Institute,
Tacoma, Wash., or Crawford Door Company, Detroit, Mich.

Craw-Fir-Dor

SELF ENERGIZING • ONE PIECE • OVERHEAD TYPE



CUT COST OF SCAFFOLDING IN HALF

RELIABLE Steel Scaffold
Brackets can be used on wood
or stucco with perfect safety.
Remember: A safe workman is
a good workman.

BRACKET FOLDS compactly.
Easy to remove and erect on an-
other job. Far less bulky to handle.

Speed Up BUILDING and PAINTING

In the last 30 years thousands of Builders and Painters
have PROVED that Reliable Scaffold Brackets cut scaf-
folding costs in half, last for decades and are many times
SAFER. RELIABLES are easy to erect and remove—leave
no holes to be plugged. Amazingly superior in every way
to wooden scaffolding. You owe it to yourself to know all
about these remarkable brackets.

WRITE TODAY for complete literature.

RELIABLE JACK CO., 1401 West Second Street
Dayton, Ohio

RELIABLE
SCAFFOLDING BRACKETS

Shop-Built Steel Buildings

(Continued from page 109)

rolled light gauge steel formed into shapes to give the structural strength required. In the case of outside buildings, a 1-inch insulating board was applied to the outer surface and finished with a four-ply built-up composition roofing. All inside structures were equipped with exhaust fan ventilators in the roofs, exterior structures having natural draft ventilators in most cases. The upper ends of the cellular walls are sealed. The units erected outside of the main mill buildings have gutters extending all around the structure, flashed integrally with the roof covering, downspouts extending to yard level or being connected with the storm sewer where convenient.

Heating installations depend upon the size of the rooms and their use. Large locker rooms and wash rooms are heated with unit heaters suspended from the ceiling. Small rooms, such as shower and wash rooms, make use of ceiling or wall hung steel radiators of the fin type. Offices are heated by means of similar wall type radiators. Steam lines are all insulated and carry only low pressure steam within the buildings. Steam supply comes from the 200 pound pressure main plant lines, being reduced to 10 pounds outside of each building through reducing valves protected by safety valves and special explosion heads on the low pressure side to assure full protection within the rooms at all times.

Extensive use has been made of stainless steel in these buildings, all doors being equipped with stainless steel kick plates full width and 8 inches high. Likewise many of the wash stands and trays are made of this material. Highly polished stainless steel mirrors eliminate the danger from broken glass. All service sinks are porcelain enameled pressed steel units.

Practical Accounting and Cost Keeping for Contractors

This practical book describes the easiest and best methods of keeping all kinds of contractor's records, time keeping, cost keeping, bookkeeping, Social Security records, estimating forms, etc. It illustrates and explains book-keeping systems for the smallest builder or the largest general contractor. It shows how to keep costs on the job and in the office, how to prepare intelligent estimates, and how to draw up contracts and sub-contracts.

170 pages, 300 illustrations, 8 1/2 x 11 1/2 inches, cloth, \$2.50.

Hogg's Wage Tables for Building Contractors

This handbook prevents mistakes and saves time when figuring pay rolls. There is a complete set of wage tables worked out by quarter hours for any length of time from 1 to 60 3/4 hours, and every wage rate from 30 cents, increasing by 2 1/2 cents per hour, to \$2.25 per hour. It also includes all odd rates, such as \$.68 3/4. You simply refer to the table showing the rate per hour and then follow down to the nearest quarter hour.

190 pages, 4 1/2 x 6 1/2 inches, thumb-indexed, flexible, \$2.50.

BOOK SERVICE DEPARTMENT

AMERICAN BUILDER and BUILDING AGE

30 Church Street

New York, N. Y.

Much valuable data was secured during the fabrication and erection of the twenty separate pre-fabricated utility structures at Irvin Works and the results of the experience gained there are now being incorporated into the design of other units of the same general type for industrial use by the several manufacturers of the pre-fabricated utility structures at Irvin Works. Each design has individual points of superiority, but it has been demonstrated at Irvin Works that industrial offices, wash, and locker room structures of pre-fabricated sheet metal construction offer substantial economies in first cost, and also many other advantages such as ease in plumbing and steam fitting, temperature and ventilation control, as well as good working conditions. Electrical lines and fixtures are easily installed. Fire hazards are eliminated and maintenance is both reduced and simplified. Wall surfaces in the shower rooms are comfortable to the touch at all times because of the insulation in the cellular walls, and all surfaces are easily maintained in a sanitary condition.

* * *

Front Cover Home

(Continued from page 47)

HARDWARE—Stanley Colonial hardware and Pella Venetian blinds.

PLUMBING FIXTURES—Crane Co.

HOME LAUNDRY—Bendix home laundry in the closet off kitchen, with clothes chute to second floor.

The basement recreation room and bar are popular features. The house has an attractive pine paneled fireplace in the living room and a corner fireplace in dining room. It is planned so that the first floor with its two bedrooms and bath and ample closets can be finished with space for two upstairs bedrooms and bath later on.

Here Are **THREE** Famous Money-Savers!

... **THE SCOTCHMAN**
AND THESE TWO GREAT

"TROUBLE SAVER"

Scaffold Brackets!

The canny Scot saves for himself, but "TROUBLE-SAVERS" will save for YOU. In material! In time! In labor! In money!

"Trouble Savers" make short work of scaffolding. They go up in a jiffy! No adjusting! No special tools required! And they can be dismantled just as quickly and easily!

Rail carbon steel construction insures a safe, "rock-like" footing! They'll last indefinitely!

Write today for prices and facts about these two great "Trouble Saver" Scaffold Brackets! Start now to make a bigger profit on every job!

The STEEL SCAFFOLDING CO., INC.
EVANSVILLE, INDIANA



NAIL ATTACHED BRACKET

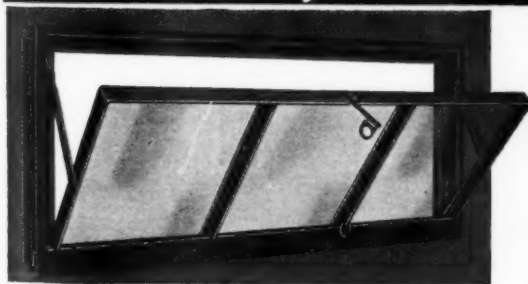
Simply drive four nails and hang a bracket. When finished, unhook the bracket, and drive the nails home. Will support a ton!



BOLT BRACKET

Bolts through a 2-by-4 across two studs. Stands solidly on two legs. Approved in all states.

A POWERFUL SELLING HELP!—That's what many builders say about the New Vento-Champion Basement Window



The NEW VENTO CHAMPION Virtually Two Windows in One—

A generous amount of indirect ventilation is provided by simply opening the window from the top. In this position ventilator deflects drafts upward and retards entrance of rain, snow and dirt. By simply a slight pull at the top of the ventilator any degree of opening up to 100% may be obtained. (See right.)

If owner desires action of top-hinged window, the ventilator may be swung up from the bottom as illustrated.

Ventilator is also quickly and entirely removable from frame for ease in glazing either before or after installation, or for full opening to facilitate the passing through of large objects.

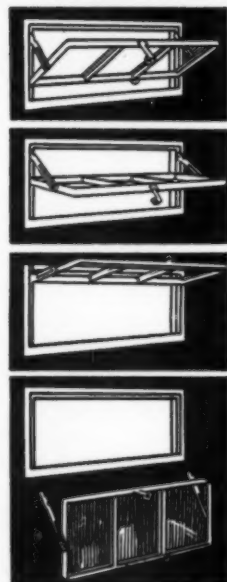
It's the easy dual operation, that gives the utmost in ventilation, the greater degree of weather tightness, better construction and many other desirable features that immediately capture the interest of every prospect and permanently please every owner.

In the final analysis, it costs no more to use this exceptionally fine new steel basement window. TRY IT and you will be convinced.

With the present keen desire for more livable basements, you're bound to find the new VENTO CHAMPION Basement Window a real selling help and good will builder worth several times the dubious saving that might be made by using the very cheapest product on the market. Ask your dealer to show them to you, or write for complete details.

Vento manufactures a complete line of window products for every type of building—top-notch quality items—backed by a company with an enviable reputation for dealer cooperation. Write for catalog.

VENTO STEEL PRODUCTS COMPANY, MUSKEGON, MICHIGAN



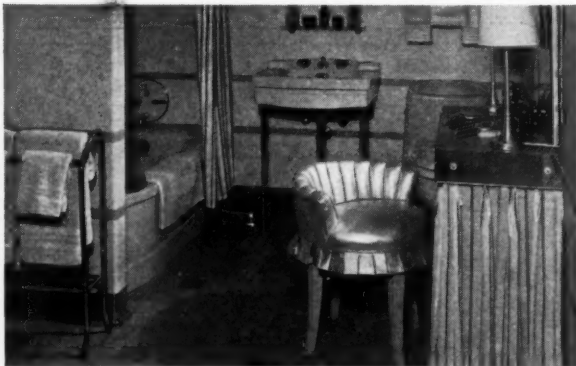
P.S. they signed the lease

CASE HISTORY ON HOW A WALL COVERING HELPS SPEED RENTALS AND SALES

I WAS showing them through the place. He was interested. But his wife was only lukewarm. Then I took them into the bathroom, and their youngster started playing around, getting finger marks all over the wall. "Junior, look what you've done!" she exclaimed.

"Nothing at all," I countered and wiped the smudges off with a damp cloth. "Mrs. Jones," I said, "finger marks and dirt won't stain these walls. They're covered with a linoleum-like material called Linowall. It's made by Armstrong, the well-known linoleum people. A damp cloth or a little soap takes smudges off easily. Note the corners. They're rounded to make cleaning a cinch. Now, suppose something knocks against this wall. The colors can't scuff off because they run right through, the way they do in inlaid linoleum."

With a high-powered story like that, the name on the dotted line was in the bag.



P.S. TO REALTORS OR BUILDERS:

Armstrong's Linowall costs only about half as much as other permanent wall materials. It is available in many attractive patterns—plains, tiles, wood effects, and marble grainings. Designs in linoleum, wood, metal, or glass can be inexpensively applied. Let us send you our color-illustrated book, *Decorative Walls of Enduring Beauty*. Armstrong Cork Company, Building Materials Division, 1218 State St., Lancaster, Pennsylvania.



ARMSTRONG'S *Linowall*
Made by the makers of Armstrong's Linoleum

LETTERS from Readers on All Subjects

Facts, opinions and advice welcomed here

One-Story Houses Favored

New York, N.Y.

To the Editor:

The growing number of one-story houses now being built reflects decided changes in the living habits of the average American family.

Its popularity is due to several factors. Chief of these is probably our present greater emphasis on outdoor living, which encourages a tendency to place all rooms on the ground floor where they are within easy reach of the outdoors.

Another factor in the switch from the customary two-story type to the bungalow is the increasing number of low-cost houses now being built and projected. This minimum type house, though completely up-to-date in its appointments and equipment, has fewer and smaller rooms than most more expensive houses. It then becomes more economical and convenient to group these rooms on one level instead of two or more.

The convenience of apartment-house living, in which all rooms are placed on one floor, has also had its influence. Many home buyers are attracted by the stair-saving convenience of one-floor houses. And, finally, one-story houses, because of their greater breadth in relation to their height, usually appear more attractive, aesthetically.

The growing use of this type house, however, brings with it several problems of design that every prospective home builder should appreciate. One of these is the added significance of the roof, which is not only brought closer to eye level, but is also

PULLMAN Gives PERFECT WINDOW CONTROL

INSTALLED IN 10 TO 15 MINUTES

GUARANTEED FOR LIFE OF BUILDING

Install PULLMAN UNIT SASH BALANCES for quiet and easy operation of windows. Made as a one-piece unit, entirely encased, all pressed steel construction, light in weight and non-breakable. They save you time and money.

Adjustable Feature: Tension of the inside coiled spring is quickly changed with an ordinary screw driver, without removing the Balances or sash.



Write for **FREE LITERATURE**

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1180 University Ave., Rochester, N. Y.

greater in proportion than it is on the two-story house. As a result, every effort should be made to make the roof appear as colorful and as graceful as possible. The present tendency to roof with the more colorful types of shingles indicates that builders and home buyers, alike, realize the value of color on roofs.

Fundamentally, the low-cost, one-story house should be as well built and as well equipped as more expensive types of houses, for most new house conveniences add comparatively little, if anything, to the cost of construction, and some, such as side wall and top floor ceiling insulation, actually reduce the cost of house maintenance by a considerable amount.

The savings made possible by complete house insulation in this low-cost type of house were well brought out in a recent experiment by the Tennessee Valley Authority which compared the fuel costs of two identical houses—one insulated, the other uninsulated. The tests demonstrated convincingly that the 3-5/8 inch thick mineral wool installed in the side walls and ceiling of the insulated house cut its fuel bill by almost 45 per cent.

The one-story house, however, will continue to be built mostly on low-cost land. In those areas where land costs are high, such as in cities and some suburbs, the two-story house is obviously more economical. But, if our present wholesome tendency of building on larger plots continues, the one-story house will undoubtedly continue to grow in popularity.

RANDOLPH EVANS, Architect.

Valuable for One "About to Build"

Lincoln, Calif.

To the Editor:

I subscribed for the *American Builder* last year to gather information to aid the planning of my new home and certainly got a fortune in information from it. Anyone planning to build should study current style trends in building and take at least a year to eliminate the imperfections in the plans for his proposed new home. I now have my home fully planned and ready for construction.

ELMER H. MURPHY, Chief of Police.

(Continued to page 114)

SAFE... AND EASY TO OPERATE

THE Ⓐ Type AC Circuit Breaker
Service Equipment and Load Centers are especially desirable for residential installation. They provide positive, automatic protection against sustained overloads. Proper time lag characteristics prevent needless circuit interruptions when momentary overloads occur. Operate manually, like an ordinary tumbler switch. Simply return the handle to the "on" position after the cause of the short circuit has been removed... Beautifully styled and finished... Priced right.

For 120 volt AC service. Capacities: 15, 20, 25, 35 and 50 Amp.
... Approved by Underwriters' Laboratories.



There is a Wholesaler near you

who carries Ⓐ Service Equipment and Load Centers in stock for quick delivery.

Frank Adam
ELECTRIC COMPANY
ST. LOUIS

IT PAYS TO RECOMMEND



Many a contract, many a property transfer and many a rental is affected by the convenience and efficiency of Frantz "Over-The-Top" Equipment. Day after day, year after year, this trouble-free equipment will testify to your good judgment and prove a powerful leverage on new business. If you're not familiar with the 1940 model, by all means get acquainted at once... write for complete information.

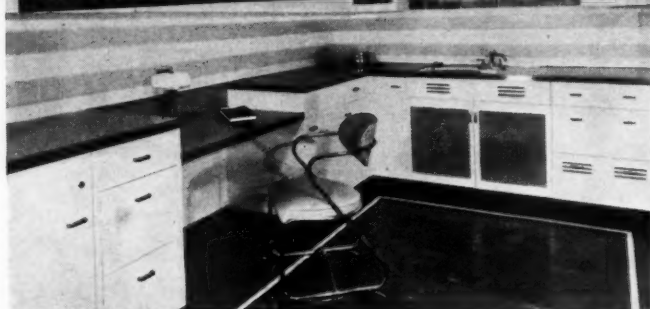
FRANTZ MANUFACTURING CO.
Sterling, Ill.

LOOK At These FEATURES

- Equipped with Automatic Openers.
- Usable on old or new doors.
- Friction brake prevents slamming.
- Only 2 1/4 inches headroom required.
- Adjustable to various weights of doors.
- Door can't close of own accord.
- Inexpensively installed.
- Door balanced in any position.
- Door entirely in building when open.
- Has chromium-plated handle and cylinder lock.

FRANTZ
Guaranteed BUILDWARE

MODERN KITCHENS *demand* MODERN FLOORING



Easy To Lay
On New Or
Old Floors.

Costs No
More Than
Good Grade
Linoleum.

For quick sales or rentals, no home luxury has greater appeal than the most modern of floorings—WRIGHT RUBBER TILE. Its richness, resilience, color harmony, and easy-cleaning features add the final decisive touch to the "kitchen of the future." Available in two types and two price levels—WRIGHTEX and WRIGHTFLOR. Both come in many attractive colors and patterns to harmonize with any decorative scheme. Write for literature and easy-laying instructions.

WRIGHT RUBBER PRODUCTS CO.
1603 Layard Ave., Racine, Wis.

WRIGHT RUBBER TILE

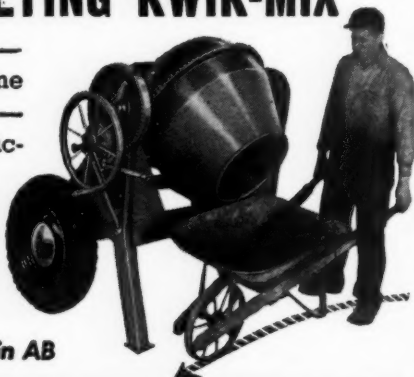
3½-S NON-TILTING KWIK-MIX



Modern rubber tired roller drum drive—No ring gear—No countershaft—Less wear—Smooth running—Load while mixing—Increased production—End discharge.

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End discharge —
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Welded construction—Anti-friction bearings—Spring mounting—High speed trailing.



Write for Bulletin AB

KWIK-MIX CONCRETE MIXER CO.
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LETTERS—

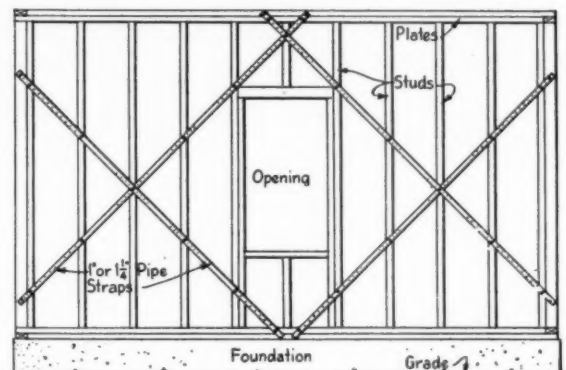
(Continued from page 113)

Suggests Economical Bracing

Portsmouth, Ohio

To the Editor:

I am enclosing a sketch of an idea I am using for bracing in residential outside frame walls. It consists of using ordinary pipe strap in 1" or 1¼" widths in 10' lengths or shorter. We run these at approximately 45° angles from corner to top and bottom plate, nailing them on the outside of studding. In many cases we are able to form an X with them. Where openings occur too near the corner, we place the X between openings. By placing a 16d common nail in the ends or a pair of 8d commons, then drawing the nails down on intermediate studs, any tension desired may be attained. However, care must be taken not to draw them too tight or the framing will be thrown out of line.



Using this bracing, we use horizontal sheathing and no other bracing whatever.

I am using this bracing on some two-story houses that are being erected under FHA 90 per cent loan plan and have been passed as O. K. by their inspection staff.

ADD THE PROFITS OF . . . COAL . OIL . GAS FIRED CONCO HEATING EQUIPMENT

WRITE FOR FREE BOOKLET

Builders and contractors are cashing in on the profits that are made possible by installations of Conco automatic packaged heat in coal, oil, or gas. Our equipment is compact, streamlined, precision-made, engineered, and backed by a responsible manufacturer whose equipment is giving creditable service in all quarters of the globe. Conco equipment comes completely wired, assembled, ready for easy installation. Mechanical features that never fail to earn the customer's approbation. Write or wire us for more information about the Conco line.



AUTOMATIC COAL STOKERS OIL-FIRED AIRCONDITIONERS GAS-FIRED AIRCONDITIONERS
The complete Conco line — coal, oil and gas-fired — is packed with "sales-ability" and "profit-ability."

CONCO CORPORATION
Automatic Packaged Heat
DIVISION OF H. D. CONKEY & COMPANY
42 AUTO AVENUE, MENDOTA, ILLINOIS

The cost of this bracing is so little and the time consumed so small as compared to diagonal sheathing time and waste that there is no comparison. The holes in the pipe strap are on approximately 1" centers so there is no difficulty in finding a place to nail.

IVAN C. WERTZ

Make Public Modern-Home Conscious

Illion, N.Y.

To the Editor:

Just a word to say that the *American Builder* does a swell job. In this busy age building contractors could report many things which might prove profitable. For instance, I suggest that the building industry should get up its nerve to undertake a publicity campaign to make the public new-home conscious. Many are living in houses forty years or more old and driving the most up-to-date automobiles. If the old, outmoded houses could be scrapped or "turned in" on new ones—as old automobiles are disposed of—there would be a home building boom far beyond the productive ability of the present home building industry.

I believe it is up to an institution like the *American Builder* to initiate and to organize nationally such a great movement.

WILLARD B. MEAD,
General Building Contractor

Nevertheless We'll Keep Trying

Minneapolis, Minn.

To the Editor:

Let me congratulate the staff on a very fine magazine on which room for improvement would be hard to find.

ED BRODERICK

Another Old Friend

Beresford, S.Dak.

To the Editor:

I was looking over some old papers the other day and ran onto my Certificate of Charter Membership to the *American Builder*, dated Mar. 29, 1905. Therefore it was 35 years ago today that I became a member, during which time I have not missed a number.

E. R. De REMER,
Contractor and Builder



Inexpensive SAVUTIME Provides AUTOMATIC HOT WATER at Lowest First Cost of Any System

Savutime is the solution to building budget headaches. Prospective buyers demand automatic hot water in any house worthy of being called a "modern home," but ordinary automatic equipment is expensive. You can hurdle this cost problem by installing Savutime with a side arm heater, since both together come to only a fraction of the cost of any other automatic system. And in addition, you can point to Savutime as a special feature of your homes that not only provides automatic hot water, but enables users to save from 30-60% in gas consumption. The convenience, economy, and safety of Savutime appeal instantly to new home prospects. Savutime can be installed within two hours on any make of hot water heater.

Write for name of nearest distributor of Savutime Controls and Savutime Insulating Tank Jackets. (Some areas still open for distributorships.)



SAVUTIME SALES CO.
32 Manhattan St., Rochester, N. Y.



SAVUTIME
GAS WATER HEATER
PUSH-BUTTON CONTROL

EXTRA INCOME FOR YOU Surfacing Business



Renew and beautify old buildings. Make new construction more permanent and attractive. Plastic Colorcrete fuses with any masonry surface. It fills all checks and can be applied in any thickness and in 30 colors and shades; fully proven by over 13 years of actual use under all conditions and every climate.

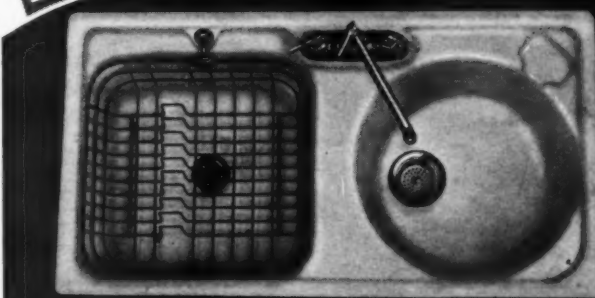
BIG EARNINGS

Owners everywhere want to enhance present values. With this new machine you can supply this big waiting market with permanent Colorcrete at an amazingly low cost. Operators report costs of 2c and up per square ft., and sell up to 7c per sq. ft. Some have paid for their equipment from the first few jobs.

Machine capacity up to 1,000 sq. ft. per hour. Get the facts. Colorcrete books tell the whole story. Write today, it may mean big extra income for you.

COLORCRETE INDUSTRIES, INC.
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MORE CONVENIENT & EFFICIENT
MORE BEAUTIFUL & SANITARY
MORE DURABLE—LONGER LASTING
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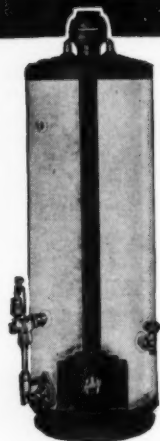


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FOR DETAILS ON
AMERICA'S SINK CHOICE

There's no substitute! The EBCO DISH-WASHING SINK is the only sink of its kind—and "The Sink America Is Buying." So you'll want the full details today. It has set a new standard in sinks. Because of its high quality, attractive design, and patented convenience features the EBCO Sink has sold itself to housewives everywhere. It reduces dishwashing to three simple steps. The easily cleaned drain, handy spray fixture, swinging-spout faucet and patented round compartment further add to its convenience and utility. And installation in any cabinet top is easy and economical. Back of wall piping is eliminated. Level rim insures watertight mounting. Also offered in a choice of sizes and colors. And it's a sink that will last! The porcelain enamel over genuine cast iron will last indefinitely. From every angle the EBCO SINK is your best buy.

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401 W. TOWN ST. COLUMBUS, OHIO

HOTSTREAM



the name of names in Water Heaters—

Don't overlook the all important water heating system, when you design or build a home. Hotstream can help you specify and install exactly the right unit for any requirements. In the Hotstream line is a heater for every need—forever fuel—
—for every purse.



GET THIS CATALOG

Hotstream Catalog No. 40 is the only book of its kind in the water heater industry. It gives complete descriptions and list prices of the most complete line of water heaters. In addition it gives necessary technical information on specifying and installing the proper size for any requirement.

THE HOTSTREAM HEATER COMPANY

8007 GRAND AVENUE

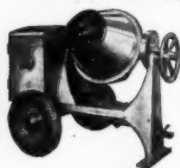
CLEVELAND, OHIO

FASTEST TYPE

SMALL MIXER

30% to 40% MORE CONCRETE with this Latest Jaeger 3½S

- Load Measuring Batch Hopper (12" lower) while you mix and discharge—fast as a power loader.



**3½S HIGH SPEED
TILTER TRAILER**
Also 5S, 7S, 10S, 14S
Power Loader Non-Tilts
with Automotive-Type
Transmission, Machined
Steel Drum Tracks.

- Criss-Cross "Re"-Mix Drum gives more thoro mix, faster discharge.
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- 3¾ H.P. Air-Cooled Wisconsin Engine—lightweight, compact.
- End Discharge Design—handy to pour, fast to trail on Timken Bearings, Springs, Pneumatic Tires.
- Most advanced mixer on market. Get new Catalog and prices.

THE JAEGER MACHINE CO.
521 Dublin Ave. Columbus, Ohio

JAEGER 1940 SPEEDLINE

"TruCost" Estimating Figures for Home Designs in this Issue

"TruCost"

The Editors have prepared a 28 PAGE EXPLANATION of American Builder's "TruCost" system of quick, accurate estimating and offer it to anyone interested at 25 cents per copy. Please enclose payment when ordering. Address American Builder, 30 Church St., New York City.

Page 44, May: Helms, Bldr.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 128 lin. ft.; Outside Walls, 13.00 sqs.; First Floor, 7.00 sqs.; Ceiling, 7.00 sqs.; Roof Pitch, 7" rise per ft. run; Roof, 8.60 sqs.; Cornice, C & F, 120 lin. ft.; Partitions, 85 lin. ft.; Inside Finish OS Walls, 108 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Inside Doors and Cased Opgs., 7 opgs.; Windows and Casements, 8 opgs.; Chimney, 24 lin. ft.; Porch Floor, .50 sqs.

Page 47, May: Gilligan, Bldr.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 116 lin. ft.; Trench Walls, 196 lin. ft.; Basement Floor, 840 sq. ft.; Garage Floor, 440 sq. ft.; Excavation per ft. deep, 35 cu. yds.; Outside Walls, 28.50 sqs.; First Floor, 13.00 sqs.; Second Floor, with fin. flg., 9.00 sqs.; Ceiling, 22.00 sqs.; Roof Pitch, 11" rise per ft. run; Roof, 24.00 sqs.; Hips and Valleys, 20 lin. ft.; Cornice, C & F, 282 lin. ft.; Cornice, 4", 136 lin. ft.; Partitions, 300 lin. ft.; Inside Finish OS Walls, 280 lin. ft.; Front and OS French Doors, 2 opgs.; Rear and Grade Doors, 2 opgs.; Garage Doors 8 ft. wide, 2; Inside Doors and Cased Opgs., 26 opgs.; Windows and Casements, 27 opgs.; Chimney, 32 lin. ft.; Main Stairs, 1; Porch Floor, 2.00 sqs.; Porch Ceilings, 2.00 sqs.; Porch Beam, 40 lin. ft.; Porch Posts, 6; Porch Roof, 3.50 sqs.; Porch Cornice, 40 lin. ft.

Presenting the New

MONARCH

T.M. Reg. U.S. Pat. Off.

UNI-POINT RADIAL SAW

Nothing to Strike Operator's Head or Shoulder!

Saw Tilted Instantly to Any Angle, without Raising or Lowering. One Half the Usual Time.

Saw Always Enters Cut at Same Point! Only One Cut on Table, Regardless of Angle.

TO BELIEVE... YOU MUST SEE

For this New Universal Woodworking Machine has something NEW in Speed, Ease of Operation, Versatility and Accuracy. Something NEW in Design, NEW in Engineering principle, NEW in Scope of Performance. As a compact, complete woodworking unit it embodies features long awaited by mill operators, woodworking shops, industrial departments, contractors and builders. Ask to have explained the "Uni-Point" principle—found on no other machine!

ALSO UNIQUE

FREE 15 DAY TRIAL

Skeptical? A UNI-POINT RADIAL SAW, Complete, will be sent to responsible builders and contractors on a fifteen day FREE trial basis. If desired, with no strings attached. Investigate!



AMERICAN SAW MILL MACHINERY CO.

Makers of Fine Woodworking Machinery and Portable Saw Mills including Saw Benches, Band Saws, Jointers, Planers, Shapers, Sanders, Mortisers, Lathes, Swing Saws and Everything for the Saw Mill.
60 MAIN STREET HACKETTSTOWN, N.J.

Page 53, May: Calhoun Farms

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 108 lin. ft.; Trench Walls, 60 lin. ft.; Basement Floor, 700 sq. ft.; Garage Floor, 180 sq. ft.; Excavation per ft. deep, 30 cu. yds.; Outside Walls, 17.50 sqs.; First Floor, 8.30 sqs.; Ceiling, 8.30 sqs.; Roof Pitch, 8" rise per ft. run; Roof, 13.50 sqs.; Cornice, C & F, 160 lin. ft.; Partitions, 135 lin. ft.; Inside Finish OS Walls, 144 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs., 11 opgs.; Windows and Casements, 14 opgs.; Gable Sash and Louvers, 2 opgs.; Chimney, 22 lin. ft.; Porch Floor, .80 sqs.; Porch Ceilings, .80 sqs.; Porch Beam, 10 lin. ft.; Porch and Balcony Post and Newels, 2; Porch Roof, 1.00 sqs.; Porch Cornice, 10 lin. ft.

Page 54, May: Calhoun Farms, 1-Story Type

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 118 lin. ft.; Trench Walls, 96 lin. ft.; Basement Floor, 850 sq. ft.; Garage Floor, 200 sq. ft.; Excavation per ft. deep, 35 cu. yds.; Outside Walls, 20.00 sqs.; First Floor, 8.50 sqs.; Ceiling, 8.50 sqs.; Roof Pitch, 7" rise per ft. run; Roof, 12.50 sqs.; Cornice, C & F, 172 lin. ft.; Partitions, 135 lin. ft.; Inside Finish OS Walls, 118 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 2 opgs.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs., 12 opgs.; Windows and Casements, 15 opgs.; Gable Sash and Louvers, 2 opgs.; Chimney, 28 lin. ft.; Porch Floor, 1.60 sqs.; Porch Ceilings, 1.60 sqs.; Porch Beam, 36 lin. ft.; Porch and Balcony Post and Newels, 8; Porch Roof, 2.00 sqs.; Porch Cornice, 36 lin. ft.

Page 54, May: Calhoun Farms, 2-Story Type

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 118 lin. ft.; Trench Walls, 96 lin. ft.; Basement Floor, 850 sq. ft.; Garage Floor, 200 sq. ft.; Excavation per ft. deep, 35 cu. yds.; Outside Walls, 25.00 sqs.; First Floor, 8.50 sqs.; Second Floor, with fin. flg., 6.00 sqs.; Ceiling, 14.50 sqs.; Roof Pitch, 10" rise per ft. run; Roof, 15.00 sqs.; Hips

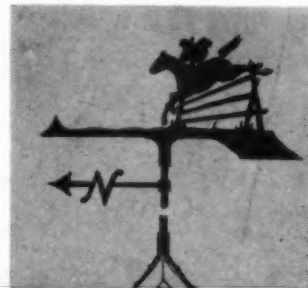
(Continued to page 118)

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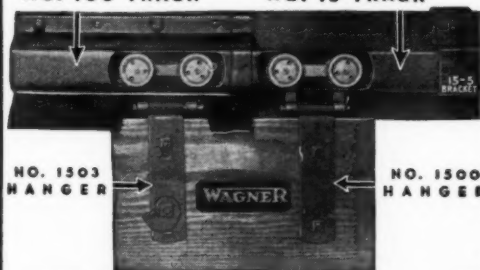


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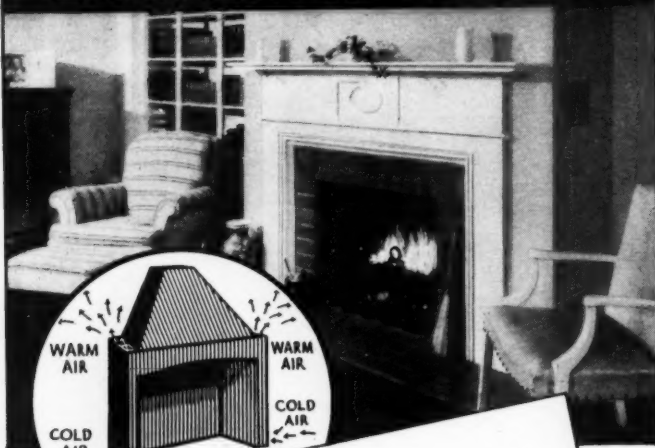
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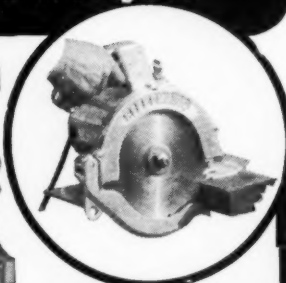
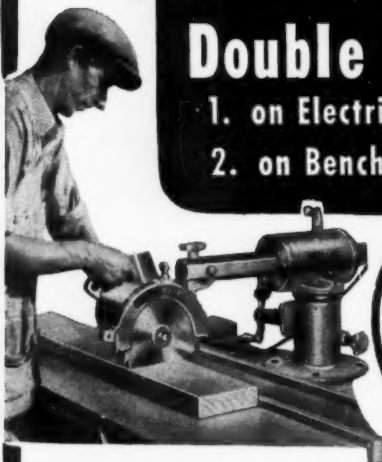
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TruCost Figures

(Continued from page 117)

and Valleys, 30 lin. ft.; Cornice, C & F, 180 lin. ft.; Partitions, 135 lin. ft.; Inside Finish OS Walls, 118 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 2 opgs.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs.; 12 opgs.; Windows and Casements, 20 opgs.; Gable Sash and Louvers, 2 opgs.; Chimney, 32 lin. ft.; Main Stairs, 1; Porch Floor, 2.50 sqs.; Porch Ceilings, 2.50 sqs.; Porch Beam, 36 lin. ft.; Porch and Balcony Post and Newels, 8; Porch Roof, 3.00 sqs.; Porch Cornice, 36 lin. ft.

Page 55, May: California 4-in-1

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 116 lin. ft.; Trench Walls, 56 lin. ft.; Basement Floor, 830 sq. ft.; Garage Floor, 158 sq. ft.; Excavation per ft. deep, 35 cu. yds.; Outside Walls, 16.00 sqs.; First Floor, 8.35 sqs.; Ceiling, 8.35 sqs.; Roof Pitch, 7" rise per ft. run; Roof, 12.75 sqs.; Cornice, C & F, 180 lin. ft.; Partitions, 110 lin. ft.; Inside Finish OS Walls, 116 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 2 opgs.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs., 10 opgs.; Windows and Casements, 8 opgs.; Gable Sash and Louvers, 4 opgs.; Chimney, 22 lin. ft.; Porch Floor, .25 sqs.

Page 56, May: Carlson, Archt.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 128 lin. ft.; Trench Walls, 70 lin. ft.; Basement Floor, 875 sq. ft.; Garage Floor, 180 sq. ft.; Excavation per ft. deep, 35 cu. yds.; Outside Walls, 25 sqs.; First Floor, 8.00 sqs.; Second Floor, with fin. flg., 7.00 sqs.; Ceiling, 15.00 sqs.; Roof, 8.75 sqs.; Partitions, 125 lin. ft.; Inside Finish OS Walls, 228 lin. ft.; Front and OS French Doors, 2 opgs.; Rear and Grade Doors, 2 opgs.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs., 11 opgs.; Windows and Casements, 21 opgs.; Chimney, 32 lin. ft.; Main Stairs, 1; Porch Floor, 1.20 sqs.; Porch Ceilings, .80 sqs.; Porch Beam, 18 lin. ft.; Porch and

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Balcony Post and Newels, 7; Porch Roof, 1.75 sqs.; Porch and Deck Rail, 76 lin. ft.

Page 58, May: Moiso & Jordan, Bldrs.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 350 lin. ft.; Garage Floor, 380 sq. ft.; Outside Walls, 36.00 sqs.; First Floor, 26.00 sqs.; Ceiling, 26.00 sqs.; Roof Pitch, 8" rise per ft. run; Roof, 34.00 sqs.; Hips and Valleys, 30 lin. ft.; Cornice, C & F, 300 lin. ft.; Partitions, 320 lin. ft.; Inside Finish OS Walls, 275 lin. ft.; Front and OS French Doors, 2 opgs.; Rear and Grade Doors, 2 opgs.; Garage Door 8 ft. wide, 2; Inside Doors and Cased Opgs., 25 opgs.; Windows and Casements, 32 opgs.; Gable Sash and Louvers, 2 opgs.; Chimney, 22 lin. ft.; Porch Floor, 4.50 sqs.; Porch Ceilings, 330 sqs.; Porch Beam, 90 lin. ft.; Porch and Balcony Post and Newels, 7; Porch Roof, 4.00 sqs.; Porch Cornice, 75 lin. ft.

Page 68, May: Droesch, Bldr.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 110 lin. ft.; Trench Walls, 40 lin. ft.; Basement Floor, 735 sq. ft.; Excavation per ft. deep, 30 cu. yds.; Outside Walls, 17.50 sqs.; First Floor, 7.25 sqs.; Second Floor, without fin. fig., 7.25 sqs.; Ceiling, 7.25 sqs.; Roof Pitch, 10" rise per ft. run; Roof, 9.00 sqs.; Hips and Valleys, 32 lin. ft.; Cornice, C & F, 124 lin. ft.; Partitions, 120 lin. ft.; Inside Finish OS Walls, 110 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Inside Doors and Cased Opgs., 10 opgs.; Windows and Casements, 15 opgs.; Gable Sash and Louvers, 3 opgs.; Chimney, 32 lin. ft.; Main Stairs, 1; Porch Floor, 1.00 sqs.; Porch Ceilings, .75 sqs.; Porch Beam, 25 lin. ft.; Porch and Balcony Post and Newels, 5; Porch Roof, 1.00 sqs.; Porch Cornice, 30 lin. ft.; Porch and Deck Rail, 20 lin. ft.

Page 90, May: English Town House

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 108 lin. ft.; Trench Walls, 10 lin. ft.; Basement Floor, 680 sq. ft.; Excavation per ft. deep, 27 cu. yds.

(Continued to page 120)

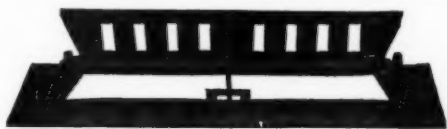
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TruCost Figures

(Continued from page 119)

yds.; Outside Walls, 20.00 sqs.; First Floor, 6.80 sqs.; Second Floor, with fin. flg., 6.80 sqs.; Attic Floor, without fin. flg., 6.80 sqs.; Ceiling, 13.50 sqs.; Roof Pitch, 16" rise per ft. run; Roof, 11.00 sqs.; Hips and Valleys, 100 lin. ft.; Cornice, C & F, 150 lin. ft.; Partitions, 150 lin. ft.; Inside Finish OS Walls, 210 lin. ft.; Front and OS French Doors, 1 opg.; Inside Doors and Cased Opgs., 16 opgs.; Windows and Casements, 22 opgs.; Chimney, 36 lin. ft.; Main Stairs, 1.

Page 92, May; Bruggemann, Bldr.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 140 lin. ft.; Trench Walls, 14 lin. ft.; Basement Floor, 1000 sq. ft.; Excavation per ft. deep, 40 cu. yds.; Outside Walls, 20.00 sqs.; First Floor, 10.00 sqs.; Second Floor, without fin. flg., 10.00 sqs.; Ceiling, 10.00 sqs.; Roof Pitch, 10" rise per ft. run; Roof, 11.00 sqs.; Hips and Valleys, 32 lin. ft.; Cornice, C & F, 150 lin. ft.; Cornice, 4", 150 lin. ft.; Partitions, 150 lin. ft.; Inside Finish OS Walls, 140 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Inside Doors and Cased Opgs., 15 opgs.; Windows and Casements, 16 opgs.; Gable Sash and Louvers, 2 opgs.; Chimney, 32 lin. ft.; Main Stairs, 1; Porch Floor, .50 sqs.; Porch and Deck Rail, 8 lin. ft.

* * *

House Sense

(Continued from page 76)

To me this means that high quality equipment, backed by a firm of high reputation, should be specified and insisted upon for real economy to the house buyer and for assurance to the conscientious builder that he has not misused the trust and confidence reposed in him by anyone who buys his houses.

I believe that *complete* operating equipment in houses is a

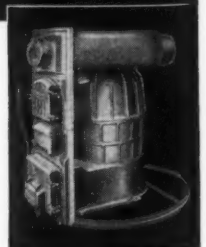
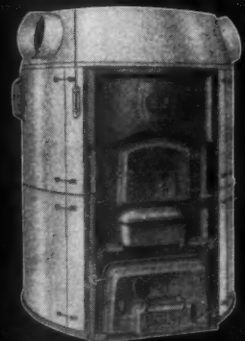


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forward step—"packaging"—that represents definite progress in the home building field which appeals to today's buying public, just as "packaged" automobiles, radios, women's clothing, etc., do.

I believe that intelligent, well-read, progressive families really want this type of home when the economies and conveniences are explained to them—that they don't want new houses that are obsolete before they're even finished.

House salesmen have an opportunity for real salesmanship—effective, creative—with such a house.

Houses so equipped represent better security from the mortgage lenders' viewpoint—they are less likely to be considered obsolete within a few years, and the purchaser's "desire to retain ownership" will be greater.

I believe that *complete* equipment assures attractiveness, satisfaction, elimination of drudgery, reliability, long service, economy, unified responsibility.

At Less Cost Per Day Than Pack of Cigarettes

It contributes to the stimulation of that inborn, but sometimes dormant, desire to own a home.

I know that complete modern home equipment under the single mortgage system would in most cases increase the monthly carrying charges on a house by only 10 to 15 cents a day—**LESS THAN A PACKAGE OF CIGARETTES!**

Does this sound unbelievable? Just look at these figures:
If more or better equipment is included in a house, at, say...\$1,000 instead of less or cheaper equipment, at say..... 400
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Increase in minimum down payment 10% (FHA 25 yr. plan) 60
Remainder 540
Increase in monthly payments when remainder can be paid for from proceeds of today's single long-term mortgage:

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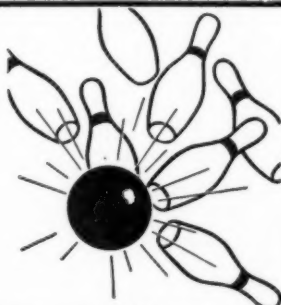
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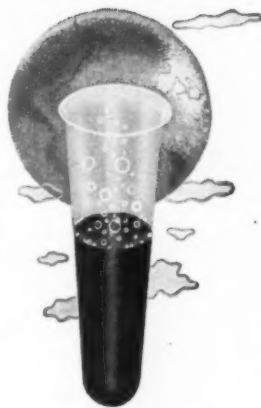
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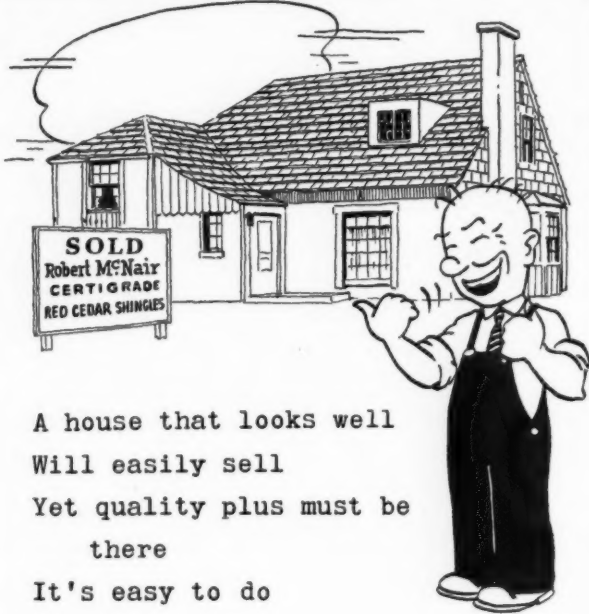


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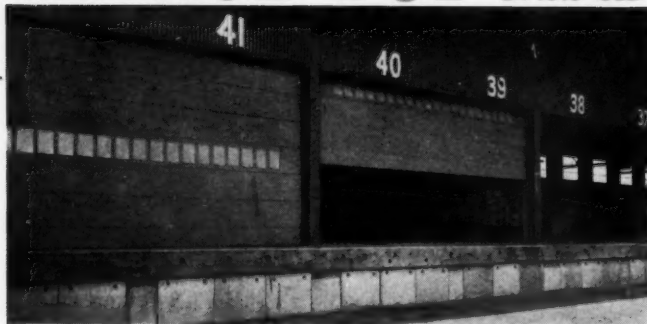
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FRAZIER DISAPPEARING ATTIC STAIRS—"Use Your Attic for Storage" is the suggestive title of a 12-page folder illustrating the five sizes of Frazier stairs and giving the dimensions and installation directions for their use. How to install in new homes or existing houses is made clear.—**FRAZIER, Inc.**, Pittsburgh, Pa.

FLOOR NAILING MACHINE—The Roy universal floor nailing machine, which is said to revolutionize the art of nailing soft or hardwood floors, is illustrated and described in a new circular. Twelve advantages are listed, and complete directions for filling and operating are given.—**DI NATALE FLOORS, Inc.**, 39 Warren Ave., Charlestown, Mass.

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GENERAL ELECTRIC

"GYPSUM PARTITION TILE AND FIREPROOFING"—The Gypsum Association offers a new handbook of 24 pages, well illustrated, under this title. Construction methods are outlined, fire tests described, and model specifications are offered for erection of gypsum partition tile and for gypsum fireproofing.—GYPSUM ASSOCIATION, 211 W. Wacker Drive, Chicago.

PEERLESS AUTOMATIC COAL STOKERS—"The 1940 Fire-Guard Line" is the title of a specification and data sheet on the Peerless line of automatic coal burners, Models No. 200, 300 and 400, for domestic and commercial use.—THE PEERLESS MANUFACTURING CORP., Louisville, Ky.

ELECTRIC PAINTING MACHINE—Mechanical painting (not an air brush machine) is disclosed in a new 8-page circular and data sheet on the Matthews centrifugal electric painting machine. This is a light hand machine with 3 pint capacity paint container. The machine weighs 5½ pounds, and those who have used it report a 25 per cent decrease in painting costs.—JAS. H. MATTHEWS & CO., 480 Canal St., New York City.

PRESERVATIVE FOR EXTERIOR MILLWORK—"Permatol" and its use as a preservative treatment for exterior millwork are covered in Technical Bulletin No. 6 of the Western Pine Assn. A series of formulae on the several uses of Permatol on finished and semi-finished wood products is included. The bulletin contains a list of the manufacturers and distributors of the Permatol commercial preservatives licensed for the "Seal of Approval" by the National Door Manufacturers Assn.—WESTERN PINE ASSN., Yeon Bldg., Portland, Ore.

"SUPERIOR FIREPLACES"—An impressive 30-page portfolio of fireplace design and construction showing photographs of rooms of various styles with fireplace and mantel treatment to match. Details of construction show the Superior Fireplace Circulator and how it operates to warm the entire house due to circulation of warmed air.—SUPERIOR FIREPLACE CO., 1046 S. Olive St., Los Angeles, Calif.

(Continued to page 124)



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SOFTWOOD INTO LUXURY WOOD

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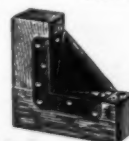
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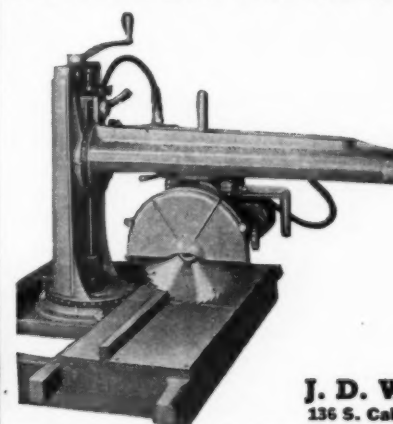
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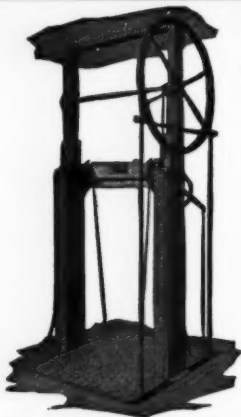
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Fitted for rapid installation in your building. These straight-line-drive machines are little giants of lifting power and are surprisingly nominal in costs.

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NO GEARS—NO PULLEYS—NO BELTS
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Motor itself forms sanding drum, eliminating costly upkeep parts. Sands more floor, by test, than other machines on same floor. Increase prestige and profits with speedy, clean-finishing Reid-Way "8", easy for ONE person to carry and operate. Works directly to quarter-round on BOTH SIDES. Equipped with Sandpaper-tightener and Motor Protector.

REID-WAY OSCILLATOR for Piano-Like Finish

Use Reid-Way Oscillator on last finishing cut, for handsome, hand-rubbed effect, without extra labor cost.

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Send NOW for
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ALLITH "50-50" PUSH-OVER HARDWARE

The PUSH-OVER stock Set will fit all openings up to 8'11" wide by 8'0" high. Sets for wider openings have two top tracks. Only 5½" headroom needed. All parts are self-aligning for easy installation.

PUSH-OVER is the answer for safe, sure and perfect door action.

IMITATED BUT NOT EQUALED
ALLITH-PROUTY, Inc.
DANVILLE, ILLINOIS

CATALOGS—

(Continued from page 123)

"CALESCO WATER HEATERS"—A 4-page data sheet, attractively presented in green and black, details this automatic oil-burning water heater offered in four sizes, 25, 35, 60 and 80 gallon capacity. Companion data sheets also cover other popular Calesco equipment, including the Calesco oil-burning air conditioning de luxe model, and also the Revere model which is designed for the small home.—**CALESCO CORP.**, Lynn, Mass.

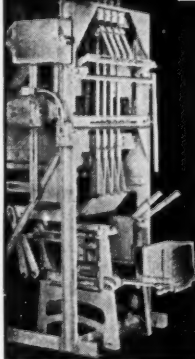
NEW LANSING TRAILER-MIXER—A 4-page illustrated specification sheet shows the new 3½ E-D-Lansing trailer-mixer mounted on pneumatic tires. The new principle of E. D. (end discharge) permits greater efficiency of loading concrete barrows, as well as a lower discharge height, which is only 27 inches. A compact 2½ H.P. air cooled engine furnishes the motive power.—**LANSING CO.**, Lansing, Mich.

REX MIXERS—Four new catalogs for 1940 present the Rex line of concrete mixers—the half-bag mixer, 5S and 7S mixer, 10S and 14S mixer, and the big Rex mixers for mixing plants. Each of these is attractively presented, well illustrated, and carries exact information covering mechanical specifications of this equipment.—**CHAIN BELT CO.**, Milwaukee, Wis.

KOEHRING MIXERS—Interesting items in the 1940 Koehring line of contractors' equipment are well presented in new bulletins. The new Kwik-Mix plaster-mortar mixer, non-tilting, and the Koehring 10-S Dandie concrete mixer are of particular importance to contractors and builders.—**KOEHRING CO.**, Milwaukee, Wis.

"HOW TO PAINT CONCRETE"—24 pages and covers, well illustrated, on how to paint concrete, stucco, masonry and other surfaces. It explains why the surfaces should be painted, the type of paint to use, and how to apply it; it also tells how to paint concrete floors successfully.—**MEDUSA PORTLAND CEMENT CO.**, 1002 Midland Bldg., Cleveland, Ohio.

LOW COST MACHINE BLOCK-BRICK-TILE



SUCCESS equipment assures profitable products plants.

BECAUSE—they are efficient, self-contained, offering lowest production cost with lowest maintenance.

BECAUSE—they produce a complete range of products, all sizes and faces of block, on plain pallets.

BECAUSE—they make block, building tile and brick by interchanging simple production machines.

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NEW BUILDERS HARDWARE CATALOGS—"General Catalog No. 27," National Brass Company, together with a companion piece, "Lock Set Catalog No. 31," contain a total of 220 pages and more than 875 illustrations. An interesting line of general and cabinet hardware, the latter in "Color-Toned" matched sets, is shown in the general catalog, while a wide variety of the Dexter tubular lock sets and latch sets is covered in the Lock Set catalog. Supplementing these large catalogs, two 16-page collections of "best sellers" are compiled for handy reference.—NATIONAL BRASS CO., Grand Rapids, Mich.

"BETTER FARM BUILDINGS WITH PRE-CUT SOUTHERN PINE"—Attractively printed in blueprint blue and black, and with a sprightly red, white and blue cover, this new 16-page association handbook presents good ideas and designs for poultry houses, hog houses, feeders, corn cribs, granaries, etc., all suggesting the use of pre-cut Southern pine. The designs are from the U. S. Department of Agriculture authorities, and the construction system should appeal to retail lumber dealers, carpenter-builders and farmers.—SOUTHERN PINE ASSN., New Orleans, La.

"SKILSAW PORTABLE ELECTRIC TOOLS"—Here is a most attractive 52-page handbook, "Catalog No. 41," covering hand saws, drills, belt sanders, hand grinders, disc sanders, blowers, floor sanders and bench grinders now comprising the Skilsaw line. The utility of these hand electric tools for production, maintenance and construction operation are illustrated and described in a most practical way. A complete price list accompanies the catalog.—SKILSAW, Inc., 5031 Elston Ave., Chicago.

DONLEY STEEL AREA WALLS—A small data sheet tells how cost savings of as much as 50 per cent result from the use of Donley steel area walls. These area walls are of 16 gauge steel and come in six sizes ranging from 38 by 17½ inches to 44 by 23½ inches.—THE DONLEY BROTHERS CO., 13902 Miles Ave., Cleveland, Ohio.



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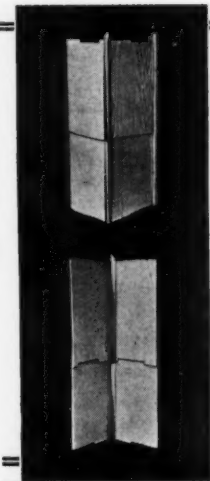


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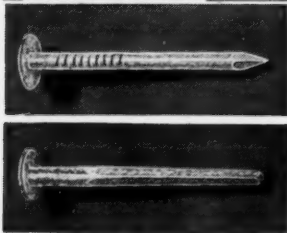


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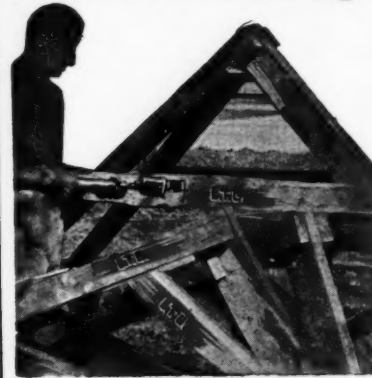
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